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ABSTRACT

This 1992 yearbook presents the following 26 articles: "Tensions between Numbers and Knowing: A Study of Changes in Assessment during Implementation of Literature-Based Reading Instruction" (P. L. Scharer); "Story Reading in Daycare: A Help or a Hindrance?" (F. K. Hurley); "Preservice Teachers' Reminiscences of Positive and Negative Reading Experiences: A Qualitative Study" (B. Moss); "Preparing Preservice Teachers for Remedial Instruction: Teaching Problem Solving and Use of Content and Pedagogical Knowledge" (V. J. Risko and others); "Rethinking the College-Based Reading Clinic: Past Traditions and New Alternatives" (J. Cassidy and M. L. Hanes); "Researching One's Own Teaching in a Reading Education Course" (L. Christensen and B. J. Walker); "Improving Teacher Questioning: A Study of a Training Program" (C. S. Johnson and A. D. Evans); "The Belief Systems and Instructional Choices of Preservice Teachers" (R. B. Lonberger); "Changes in Primary Teachers' Instructional Practices After Year 1 of a Collaborative Whole Language Project" (C. D. Kraus); "Grouping for Reading Instruction in the Multicultural Classroom: Dilemmas and Solutions" (E. G. Sturtevant); "Story and Song: Integrating Music into the Literature Curriculum" (K. A. Koebler); "The Reader as a Sleuth: Engagement by Intrusion" (M. C. Alvarez); "Overcoming Environmental Obstacles to Reading: A Comparative Analysis" (S. M. KaiKai and R. E. KaiKai); "Student, Teacher, and Expert Differences in Identifying Important Content Area Vocabulary" (D. L. Mealey and others); "Preparing Literacy Teachers: Elements of an Effective Training Model" (G. Y. Turner); "A Nonacademic Adult Writer's Workshop" (J. Phillips); "Undereducated Adults: Retrospections of Childhood Homes and Reports of Present Practice" (B. J. Fox and M. D. Siedow); "Directed and Spontaneous Transfer of Textmarking: A Case Study" (D. L. Mealy and D. W. Frazier); "Person, Process, Product: Goals of an Integrated Reading/Writing Curriculum for Underprepared College Freshmen" (J. K. Stadulis and D. G. Shearer); "Fostering Metacognitive Growth in College Literature Classrooms" (E. V. Newton); "Writing in Response to Reading: Strategies to Foster Comprehension" (A. R. Friedman); "Children's Emergent Reading Behaviors across Different Kinds of Text and the Relation to Writing Systems" (J. E. Barnhart); "Portfolio Assessment: Interpretations and Implications for Classroom Teachers and Reading Teachers" (R. P. Harlin and others); "Taking Responsibility for Taking Tests" (J. S. Richardson); "Scotopic Sensitivity Syndrome and Its Treatment by Colored Overlays and Lens Filters: An Update" (W. A. Henk); and "Questioning the Verbal Superiority of Girls: Gender Differences Revisited" (M. M. Brittain and C. V. Brittain). (RS)

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LITERACY RESEARCH AND PRACTICE: FOUNDATIONS FOR THE YEAR 2000

Fourteenth Yearbook
of
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Table of Contents

What makes Good Research: A Pragmatic View ix
NANCY PADAK, TIM RASINSKI, AND JOHN LOGAN

DISSERTATION AWARD 1

Tensions Between Numbers and Knowing: A Study of Changes in Assessment During Implementation of Literature-Based Reading Instruction 3
PATRICIA L. SCHARER

MASTER'S THESIS AWARD 15

Story Reading in Daycare: A Help or a Hindrance? 17
FRANCES K. HURLEY

RESEARCH AND PRACTICE IN TEACHER EDUCATION 27

Preservice Teachers' Reminiscences of Positive and Negative Reading Experiences: A Qualitative Study 29
BARBARA MOSS

Preparing Preservice Teachers for Remedial Instruction: Teaching Problem Solving and Use of Content and Pedagogical Knowledge 37
VICTORIA J. RISKO, DALE YOUNT, AND DENA MCALLISTER

Rethinking the College-Based Reading Clinic: Past Traditions and New Alternatives 51
JACK CASSIDY AND MADLYN L. HANES

Researching One's Own Teaching in a Reading Education Course 57
LINDA CHRISTENSEN AND BARBARA J. WALKER

Improving Teacher Questioning: A Study of a Training Program 65
CAROLE SCHULTE JOHNSON AND ALLEN D. EVANS

The Belief Systems and Instructional Choices of Preservice Teachers 71
ROSEMARY B. LONBERGER

Changes in Primary Teachers' Instructional Practices After Year 1 of a Collaborative Whole Language Project 79
CECILE D. KRAUS

RESEARCH AND PRACTICE IN LITERACY INSTRUCTION 87

Grouping for Reading Instruction in the Multicultural Classroom: Dilemmas and Solutions 89
ELIZABETH G. STURTEVANT

Story and Song: Integrating Music into the Literature Curriculum 95
Kristeen A. Koebler

The Reader as a Sleuth: Engagement by Intrusion 101
Marino C. Alvarez

Overcoming Environmental Obstacles to Reading: A Comparative Analysis 109
Septimus M. KaiKai and Regina E. KaiKai

Student, Teacher, and Expert Differences in Identifying Important Content Area Vocabulary 117
Donna L. Mealey, Bonnie C. Konopak, Mary A. Duchein, Deidra W. Frazier, Timothy R. Host, and Connie Nobles

RESEARCH AND PRACTICE IN ADULT LITERACY 125

Preparing Literacy Teachers: Elements of an Effective Training Model 127
Gwendolyn Y. Turner

A Nonacademic Adult Writer's Workshop 135
Jerry Phillips

Undereducated Adults: Retrospections of Childhood Homes and Reports of Present Practice 141
Barbara J. Fox and Mary Dunn Siedow

RESEARCH AND PRACTICE IN COLLEGE LITERACY INSTRUCTION 151

Directed and Spontaneous Transfer of Textmarking: A Case Study 153
Donna L. Mealey and Deidra W. Frazier

Person, Process, Product: Goals of an Integrated Reading/Writing Curriculum for Underprepared College Freshmen 165
Janet Klimasz Stadulis and Deborah Gale Shearer

Fostering Metacognitive Growth in College Literature Classrooms 173
Evangeline V. Newton

Writing in Response to Reading: Strategies to Foster Comprehension 183
Anne R. Friedman

RESEARCH AND PRACTICE IN EVALUATION OF READERS 191

Children's Emergent Reading Behaviors Across Different Kinds of Text and the Relation to Writing Systems 193
June E. Barnhart

Portfolio Assessment: Interpretations and Implications for Classroom Teachers and Reading Teachers 203
REBECCA P. HARLIN, SALLY E. LIPA, AND STEPHEN PHELPS

Taking Responsibility for Taking Tests 209
JUDY S. RICHARDSON

Scotopic Sensitivity Syndrome and Its Treatment by Colored Overlays and Lens Filters: An Update 217
WILLIAM A. HENK

Questioning the Verbal Superiority of Girls: Gender Differences Revisited 227
MARY M. BRITTAIN AND CLAY V. BRITTAIN

What Makes Good Research: A Pragmatic View

NANCY PADAK

TIM RASINSKI

JOHN LOGAN

The role of editor is many faceted. Most people think of editors as the folks who make decisions about whether an article will be published in a particular journal. Although this is certainly true, other, more subtle, editorial functions exist. One of the most subtle is to guide and encourage potential contributors to their journal. After three years of reading, reviewing, and editing research manuscripts submitted to the *CRA Yearbook*, we have developed some specific ideas about what makes good research. We believe that these ideas separate the interesting and provocative studies that have potential for affecting the profession from the more mundane, run-of-the-mill research pieces. Our ideas may not be earth shaking, but we believe that they are worth mentioning again to guide authors, raise discussion, and, in our own limited way, help potential contributors to this and other professional literacy journals conduct and report research that is meaningful and important.

INTERESTING AND IMPORTANT RESEARCH QUESTIONS

The key to any research study is the question that the research attempts to answer. Regardless of how thorough the literature review is or how elegant the research design may be, if the research questions are not compelling, the entire study becomes suspect. As literacy educators, we believe that research questions should have value to those who teach literacy. Teachers or those of us who teach teachers should be able to use the results of the study to help inform and improve instruction or to help us better understand how readers learn to read.

Research questions should go beyond confirming the obvious or near obvious. Researchers need to ask themselves, "Is this question one that has been answered before?" We advocate using the "So what?" test. After forming a research question, ask "So what?...Of what importance is this question?" "How will answering this question affect literacy instruction?" "What difference will this study make?" If the study passes the "So what?" test, then it may be worth pursuing. The time spent by researchers thinking through their questions is worth every minute.

APPROPRIATE RESEARCH PROCEDURES

Research procedures should be clear and to the point. Procedures should be described in enough detail to allow for easy replication. Moreover, the procedures should be dependent upon the question that is asked; that is, the procedures employed for addressing the question should seem appropriate to the reader. The method should not get so bogged down in elaborate designs and methodologies that the reader wonders how the procedures are connected to the questions at hand. Instructional research should take place in authentic settings, and the treatment should be of reasonable length so that students can become familiar with it. A one-week treatment may result in a significant effect, but we may wonder if that effect is due to the novelty of the instruction rather than its substance. Control group treatments, too, should be reasonable and authentic to the instructional context, and the amount of instructional time and resources given to all treatments should be comparable.

Measures of significant variables should be appropriate for the variables. Comprehension, for example, should be assessed by some method or instrument that is meant to measure comprehension. Conversely, when overall reading performance is measured only by word list recognition, we are led to wonder about the appropriateness of the measure and the procedures employed in the study.

DATA ANALYSIS

Again, the keys to good data analysis are appropriateness and clarity. Data analysis should go far enough only to answer the research questions. Analyses that go beyond the original question or continue to confirm what was found in a previous analysis tend to overwhelm the reader and draw the reader's attention away from the important findings and toward the researcher's prowess in statistical analysis. A factor analysis, although sophisticated, is not impressive when a *t*-test would have sufficed. Research reports are meant to inform those who read them. Appropriate analyses are essential to a good study, but excessive and unneeded analysis tends to weaken an otherwise informative report.

One descriptive statistic that is very useful in quantitative comparisons is effect size. This statistic complements tests of significance. It goes beyond identifying whether an observed effect is due to the treatment or to chance and provides readers with a sense of the magnitude of the treatment effect.

Clear and systematic analyses are likewise important in qualitative or naturalistic research. Judicious use of qualitative research references in the analysis section of the paper can alert the reader to the specific analytical tools employed in the research. Moreover, since data from these studies are typically words rather than numbers, the balance between researcher syntheses and the "voices" of participants is critical.

Of course, there are other aspects to good research. The literature review, one's writing style, and the ability to discuss one's findings within the theoretical and practical framework established in the literature review are just a few. Nevertheless, in our own work as editors and reviewers, our concerns about the research that we read most often focus on the researcher's questions, procedures, and data analysis. Good research asks the sometimes tough but always interesting questions and is designed and analyzed in ways that are reasonable and appropriate but never overwhelming to the reader or to the question that the research attempts to address.

DISSERTATION AWARD

Tensions Between Numbers and Knowing: A Study of Changes in Assessment During Implementation of Literature-Based Reading Instruction

PATRICIA L. SCHARER
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Commercially prepared basal reading materials are widely used in elementary classrooms for reading instruction (Shannon, 1989). Proponents argue that teachers have neither the time nor the expertise to develop suitable lessons without using commercially prepared materials that are written by reading experts, are based on scientific studies of the most efficient way to teach reading, and are sequential in nature to ensure the teaching of skills necessary for students to become fluent readers (McCallum, 1988; Shannon, 1987). Scope and sequence charts of basal programs segment the reading process "into discrete skills so that increments of progress can be identified across grades" (Shannon, 1989, p. 57). Student progress may then be identified through achievement scores on objective tests based on the skills for each grade level. Basal assessment tools provided for teachers typically include daily worksheets and tests for each level and unit.

Critics of basal programs, however, argue that learning to read should not be "dissected into predefined, linear, component parts that are divorced from the naturally occurring dialectical structures that constitute purposeful literacy activities" (Taylor, 1989, p. 192). They argue, instead, that children's reading abilities are strengthened by increasing instructional time spent listening to and reading meaningful, interesting stories (Allington, 1984; Elley & Mangubhai, 1983; Nagy, Herman, & Anderson, 1985; Smith, 1988, 1989; Tunnell & Jacobs, 1989) and decreasing time spent completing worksheets on discrete skills (Anderson, Hiebert, Scott, & Wilkinson, 1985; Taylor, Frye, & Gaetz, 1990). Often, poor readers, who have the greatest need to read connected text, are least likely to do so because instruction provided them most often takes the form of more rather than fewer worksheets (Allington & Broikou, 1988).

As interest increases in the use of authentic, whole texts as the basis for literacy learning, interest is growing as well in alternate assessment tools such as "kid watching" (Goodman, 1985), running records (Clay, 1985), documenting student-teacher conferences, and collecting reading and writing artifacts into portfolios (Maeroff, 1991; Tierney, Carter, & Desai, 1991). Teachers beginning to limit the use of basal worksheets and tests in their classrooms, however, may find that the implications of abandoning worksheets reach far beyond assignments and seatwork to issues related to documenting state and district courses of study, preparing for competency tests, and assigning student grades (Scharer, 1989; Sloan, 1991).

Historically, basal worksheets and tests enabled teachers to easily translate student achievement into multiple scores per grading period. According to Shannon (1989), "Objective tests replace teachers' judgment concerning whether or not a student is to be considered literate because teachers' judgment is unpredictable" (p. 57). More recent informal assessment tools such as those mentioned above, however, rely heavily on the subjective, professional judgment of the teacher. Little research has been conducted examining the process through which teachers move from a heavy reliance on basal components to a more holistic approach to both literacy instruction and assessment in which they must regain confidence in their own judgment concerning student achievement. The purpose of this study was to document and describe patterns of change concerning assessment during implementation of literature-based reading instruction. Data reported here were collected as part of a larger study (Scharer, 1990) examining changes in teachers and classrooms over a nine-month period as teachers increased the use of literature for reading instruction.

METHOD

Data Collection

Five focus teachers (grades 1, 3, 5, 6, and a teacher of learning disabled children) volunteered to participate in this study. They work in an elementary school in the Midwest where the staff had recently established a five-year plan to implement literature-based reading instruction. During the third year of implementation, data for this study were collected through interviews with individual focus teachers (five per teacher, 30–60 minutes each, audiotaped), observations (six per teacher, 60–90 minutes each, field notes), and forum discussions (10 meetings with various staff members, 90 minutes each, audiotaped). Data concerning assessment were collected in almost every interview, observation, and forum discussion throughout the school year. Approximately 25% of nearly 600 pages of single-spaced interview and forum data was coded with categories related to assessment.

Interviews. The initial interviews conducted in August focused on how basal materials and literature had been used for reading instruction in previous years, plans for using literature during the upcoming school year, and teachers' current goals and concerns about their reading program. Four additional interviews were spaced throughout the school year following classroom observations and featured two types of questions: questions that were asked of all teachers based on ongoing data analysis and questions that were specific to each teacher to clarify, confirm, or extend previously collected data.

Observations. Classroom observations were scheduled at the teachers' convenience during reading instruction and were documented through extensive field notes. Attempts were made to observe all aspects of each teachers' reading program, including small and large group instruction, sustained silent reading, and individual conferences.

Forum discussions. Two types of forum discussions were held: (1) meetings with only the focus teachers (usually held during school hours), and (2) after-school meetings for the entire staff that were occasionally divided into primary and upper-grade sessions. Focus teachers selected discussion topics, which included sharing information following professional development opportunities such as attending literature conferences or visiting a literature-based school, discussing issues concerning evaluation, and reflecting on the process of change. The forums were lively interactions that provided opportunities to share progress and problems concerning implementation of literature-based reading instruction (Clark & Florio-Ruane, 1984; Donmoyer, 1990).

Data Analysis

The study was organized into three phases over the course of the school year. During each phase, interviews and forum discussions were transcribed and entered into a computer program, Ethnograph (Seidel, Kjolseth, & Seymour, 1988), with the capability to accept multiple coding categories and to easily sort and retrieve coded information. During ongoing analysis and between phases, coding categories were tested and refined, multiple sources were compared to triangulate data, member checks were conducted, and questions were developed for future interviews. Upon exiting the research site, the researcher wrote individual case studies (Scharer, 1990) and conducted cross-case analysis. Data reported here were analyzed inductively (Bogdan & Biklen, 1982) to determine patterns of change in assessment during the nine-month study.

RESULTS

First, baseline information will be reported concerning the types of and rationales for assessment tools used at the beginning of the study. Changes in assessment tools during the school year will then be discussed, and the difficulties experienced as teachers attempted to use new documentation techniques will be described. Finally, patterns of change in four of the five teachers will be illustrated using data from the experiences of two focus teachers.

August Assessment Concerns

District course of study. During August interviews, teachers expressed concerns about how to satisfy the district's course of study without using basal worksheets and tests. Andrea (grade 6), for example, concluded:

> It [literature-based reading instruction] is not good for upper grades. It does not lend itself for teaching the objectives and course of study. I am not sure I am picking the right reading selections to develop the skills they need.

Similarly, Nadine (LD) explained that general comprehension objectives could be more easily satisfied than specific phonics goals.

> You can always reach the goals of main idea, appreciation of literature and things like that but the more specific goals, the phonics types of goals, I find harder to reach through literature and substantiate what I am doing.

Grading policies. Nancy (grade 1) was less concerned about grades than the other focus teachers since she was not required to use letter grades (A, B, C, etc.) but, instead, used S (satisfactory), N (needs improvement), and U (unsatisfactory). The upper grade teachers, in contrast, were expected to assign a letter grade to each student every nine weeks and were concerned about having appropriate evidence to support decisions about grading.

> How do I evaluate comprehension for a grade card? If I have a parent come in upset about a grade, in the old way you can open up your grade book and see the numbers and say, "Look, this is what the grades show and this is average and this is why he got a C." I'm not sure what is an accurate measure of their reading progress. I am not sure yet how I would explain that to somebody. (Andrea, Grade 6)

Without numerical scores from worksheets and tests, teachers worried that their grading decisions would be challenged by parents as unsubstantiated and unfair.

> I guess the main thing I am worried about is the accountability. If a parent says to me, "Why did my child go from a C to a B in reading?" I need to be able to say well, I listened to him read and I can see that he is progressing. But I need something to back that up. (Nadine, LD)

> Why should teachers have to defend why they have given a grade? We do. We have to show the parents in black and white. That is the reason I still use the basic text and the skill pack pages plus other written assignments where you can take a grade. (Terry, grade 5)

August Assessment Plans

During August interviews, all five teachers explained that they were gradually eliminating components of the basal reading program and increasing the use of literature in their reading programs. They first eliminated stories that were boring or uninteresting. Using a similar criterion, most teachers were also eliminating some worksheets to make time to read more books. Due to perceived pressures of fulfilling the course of study and making grading decisions, however, teachers were reluctant to eliminate workbook pages totally. For similar reasons, the basal testing program remained fully intact early in the year in all five classrooms as a way to document student progress.

Terry (grade 5) described the mixture of basal materials and novels that her class would read during the year. Data collection throughout the year confirmed that Terry adhered to her August plans. Terry explained in the final interview that students completed every worksheet due to pressures of the course of study and parental expectations regarding grades.

> That is the reason I am still doing the skill pack. That way, if I have done that, I can say to parents, "Look, this has been our course of study." That will satisfy that. If a parent complains, I can say, "Yes, your child got all these skills. They were taught. It is a record of that."

Terry was comfortable with the use of worksheets and unit tests for satisfying both district level objectives and grading criteria and did not attempt to use alternative assessment strategies. For her, there were no "tensions" related to assessment and, consequently, her instruction and assessment procedures remained unchanged during this study. Her four colleagues, however, struggled with attempts to use new assessment techniques throughout the year.

Tensions of Time and Technique

As more classroom time was being spent reading literature, writing in response to stories, and talking about books with the teacher and other students, four of the focus teachers became less concerned with satisfying the district's course of study and increasingly concerned about documenting student progress in reading so they could translate progress into grades and teach lessons based on student needs. They became uncomfortable with assessing students with worksheets and basal tests, since scores on such written work did not fully reflect the reading and writing students were doing. Students were enthusiastically reading and responding to books, and teachers began to look for ways to document student achievement. Their attempts, however, were accompanied by many difficulties.

In August, Nancy (grade 1) explained that for many years, her lesson plans consisted of a stenographer's notebook that contained a list of the basal stories and worksheets in the order recommended in the teacher's manual. As each of the three ability groups completed each task, she simply checked it off in her book. Reading instruction in her room now was centered around big book lessons (Holdaway, 1979) she was developing for her students, but she was concerned that there was little time for listening to individual children read: "It bothers me that with grade card time only three weeks away, if I have a chance to just read with them once a week, it is not very much to get a true picture." When Nancy compared her class with previous students, she was pleased with the students' enthusiastic responses to reading big books, their increased willingness to attempt unknown words, and the extended time they were spending reading books independently and with their friends. However, the organizational shift away from three reading groups twice each day left her little time to record information about individual progress.

Tonya (grade 3) wanted to organize a notebook to record information during individual conferences with her students but found it difficult to schedule sufficient time for the conferences and to decide what to write down while she listened to students read.

> I am not happy with this [conferencing]. Right now I just kind of hit or miss. Part of my problem is organizing my time. I need to work on this. It seems that we have time for lots of things, but no time for conferences. My records are bits and pieces stuck together. That is another thing that I need to work on, getting everything down.

Teachers also experienced difficulties finding the time to write down anecdotal records about their daily observations of students' reading. They often celebrated insightful comments and behaviors as they talked about their students but did not always record the information. During the final interview, Nadine (LD) reflected on her assessment documentation and concluded:

> I have relied much too much on subjective evaluation rather than on things I have written down that I have converted to a grade and put in my grade book. If a parent would say, "How did you arrive at this?" I would not be able to say, "Look, here is what they have done." I could say, "This is what I have noticed." I would not be able to go to specific notes to say, "This is what happened on this day."

Changes in Teachers and Teaching

As the four teachers explored alternative forms of assessment, they redefined their criteria for making grading decisions and made changes in their roles as teachers. Examples from two teachers (Andrea and Nadine) will illustrate these changes.

Changing evaluation criteria. In September, Andrea (grade 6) chose two survival novels for her students to read and created worksheets for each chapter to assess student achievement. After reading each chapter silently, students completed a worksheet and gave it to Andrea to grade. Although she easily filled her grade book using their scores, she began to question the usefulness of this practice:

> I'm all the time now just grading papers and they are reading. I just get them done and I think, Oh boy. Then, here comes about three more to turn their papers in. I am not enjoying this at all. I don't like it. I am ready to change it. It ties me down away from the kids. I am just grading papers.

Andrea decided to eliminate the chapter question sheets and provide her students with choices in not only what they read, but how they would respond to what they were reading. She obtained a collection of biographies from the public library and prepared brief minitalks about each of the books. Since she had not read most of the books, she focused her "pitches" on what she knew about the life of each person. Students chose books and generated sharing ideas such as making dioramas, documenting the person's life through a time line, or writing a biographical sketch. Andrea noted a change in her students as readers: "With the biographies, they were bubbling about what they were reading. They wanted to share with each other. This [question sheets] was old, boring class work. There was no discussion—just what did you get for question 4?" She reflected on her observations and was pleased with the changes in her students and also the changes in her role as a teacher.

> The kids were into the reading and they used their time very well. They wanted to read. They did not have to be forced to do it. It was more efficient for me because I was not making up question sheets for one biography to go over with the class. I was involved with them. I was conferencing one on one. It was more personal attention for them.

Andrea began to question what she valued in her students as readers and how she might better translate her observations into grades: "Well, what is assessment of reading? Is it their ability to decode or all the little pieces that we find in achievement tests or is it something nebulous that we can't define?" She used her observations of her students as they responded to reading self-selected texts in a variety of ways to redefine and clarify what she felt were important reading behaviors. When asked to list what she had valued previously, she replied with terms as objective scores, skill packs, pretests, and posttests. She concluded that she had been scared to use her own judgment. At mid-year, however, she talked about valuing attitude toward reading, interactions with books, reading habits, the development of projects, and comments that showed relationship between other books or content area studies.

> It is easier because you aren't grading answers. It is harder because I don't feel I am doing what I should be doing which is the traditional teacher role of standing up there and giving them information and sheets. I will be doing observational types of things for evaluation. That will be it. It is harder because I have to pay attention to things I did not before

Changing from text-driven to child-driven instruction. Nadine (LD) was particularly concerned about what skills to teach her students. She came to the first forum discussion with a stack of basal readers representing the levels of students in her room and wanted to know how to teach the skills in the scope and sequence chart using literature: "Then, how do we orchestrate teaching something like the sound of *-ough*? Do you go through literature books and find a book that has those sounds?" Nadine was frustrated with trying to teach individual students the skills in the sequence suggested by the basal publisher. She noticed that her students were more motivated to read literature selections than basal stories and was pleased that they were enjoying reading stories independently but was concerned about finding sufficient time to teach the skills they missed on the beginning of the year basal pretests.

Nadine began to use running records (Clay, 1985) to document students' reading behaviors, which resulted in two changes in her role as a teacher. While taking running records, Nadine spent a great deal of effort using check marks and other codes to write down exactly how each student was reading. She was so busy trying to keep up with the students' reading that she no longer interrupted when the student made an error.

> I have changed a good bit in my teaching tactics. Now that I have used some running records and let them predict and go ahead and come back, they are figuring more words out for themselves. Last year, as soon as they would come to a word, I would give it to them. If they tried it and got it wrong, I would have corrected them.

Nadine also noted that, in the past, students were quite likely to correct each other but, now, the rules in the classroom had changed: "They corrected each other quite a bit too. This year we say, let him go on, see if he can figure it out."

A second change in her role as a teacher occurred as she began to make instructional decisions based on her observations and documentation during running records. She began to shift from teaching the next skills in the basal program to teaching her students based on her observations of needs.

> When I first started doing running records, I just took them. Then you say, "OK, what am I going to do with this?" This has been a slow process for me. It has been overwhelming for me. Little by little I am catching on to it. Oh, look what this kid is doing. He has done it in the last four running records. We need to work on that.

DISCUSSION

Advocates of literature-based reading instruction caution educators that implementation should not be as simple as changing from one set of materials to another. Recommended changes, in fact, challenge well-established classroom practices such as three ability groups, round robin reading, quiet seatwork, and reading books "after your work is finished." Gardner (1988) worries

> about the prospect of rhetoric without substance, applying lip service to policy reform: proclaiming the virtues, discussing it philosophically, packaging and marketing it beautifully — and then tossing it out in a few years because goals were not met or there was a change in leadership.

Without significant staff development opportunities, she argues, teachers will be scrambling for the right way to reach each book and will "risk making the study of literature as dry and meaningless as the basals." (p. 251)

The case study of Terry illustrates the possibility that change may be limited to substituting one set of reading material for another. During her August interview, Terry explained that she had gradually skipped about half of the basal stories and assigned paperback novels for her students to read instead. She was comfortable with her current mixture of basal and literature and had a single goal for the upcoming year: to find a couple of good books to read aloud to her students. Her current collection of classroom sets of paperback novels was sufficient, and she had no desire to purchase more books. The effect of literature on her grading policies was limited to counting the number of books students read in their free time. By assigning all workbook sheets and tests, she remained comfortable that she had satisfied the course of study. For her, grading was a simple, mathematical procedure.

However, this study also documents the struggles of the other four teachers as they decreased the use of basal materials and attempted to assess reading achievement in ways beyond worksheets. The depth and variety of their difficulties have important implications for staff development. Teachers need support to resolve the tensions experienced as they balance fulfilling course of study and grading mandates with appropriate documentation of student progress. Providing significant inservice opportunities for learning about assessment may result in benefits beyond changes in documentation procedures. As teachers learn about assessment tools such as running records, "kid watching" and portfolios, they may begin to change not only what they value in their students, but also their beliefs about their roles as teachers. According to Andrea (grade 6), "It is harder because I have to pay attention to things I did not before." As she paid attention to new reading behaviors, Andrea used her observations to adjust her role as a teacher and to confirm that, in fact, her students were becoming enthusiastic readers as she changed from "an imparter of knowledge asking questions on comprehension checks [teacher-made worksheets]" to a "facilitator" who was supporting students, observing their needs, creating small group teaching sessions when needed, and fostering ways for students to talk with each other about books. Similarly, Nadine (LD) gained new insights into her students as readers and herself as a teacher as she used running records in her classroom.

Guskey (1986, 1989) argues that changes in teacher beliefs will occur only as a result of both changes in classroom practice and changes in teacher observations of student outcomes. Furthermore, if no changes are observed in student outcomes, classroom practices will be abandoned. Learning about new ways to observe and document student outcomes may be crucial to the implementation of literature-based reading instruction resulting in positive changes for both teachers and students.

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MASTER'S THESIS AWARD

Story Reading in Daycare: A Help or a Hindrance?

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Children living in a literate society make many discoveries about and advancements toward literacy prior to formal academic instruction (Doake, 1984; Harste, Woodward, & Burke, 1984; Taylor, 1983; Teale & Sulzby, 1989). These preschool literacy-related discoveries seem to be inextricably bound with later success or frustration with literacy acquisition in school (Brailsford, 1986; Heath, 1983; Juliebo, 1985, 1987; Morrow, 1989; Teale, 1986). The research literature provides a composite picture of literacy learning for the preschool child growing up in a positive literacy environment in the care of a stay-at-home parent: The child is engaged in extended conversations, is read to, and is helped to determine the functional nature of print through the unforced inclusion of literacy events within the context of everyday life. In this environment, it is usually the parents' intent to enrich their children's lives and chances for success, but the parents do not often see themselves as teachers, and the instructional aspect of literacy learning is clearly subjugated to the loving closeness that the vehicle of literacy interaction allows (Taylor, 1983).

The extent to which characteristics of this composite picture of the home literacy environment are prevalent in Canadian daycare literacy environments is a relatively unexplored area of research. Herein lies the pondering that led to this research project: If preschool children make many discoveries about literacy and literacy-related issues in the home environment, and if these discoveries influence later success or frustration with literacy acquisition, then what happens to preschool literacy learning for daycare children?

In short, what is the literacy environment of daycare? To develop understanding of this broad question, the following subquestions were posed:

1. What is the nature of storybook interaction in the daycare center?
2. What is the oral language environment of the daycare center?
3. What is learned about literacy through play in the daycare center?
4. What other instances of literacy learnings are occurring in the daycare?

It is the intention of this paper to elaborate on the first of these four questions.

METHODOLOGY

The research was conducted in the context of one daycare center; a government-approved middle-class daycare center was observed for 132 hours over a six-month time period. The researcher, a participant observer, studied three caregivers and 14 daycare children. The children ranged from 1.7 years to 5.6 years. Data sources were the researcher's observational field notes of 30 storybook events, audiotapes and transcriptions of 8 storybook reading sessions, and audiotapes and transcriptions of daycare worker interviews. The analysis of these data initially consisted of determining the chief caregiver's explicitly stated philosophy of story reading, determining pre- and poststorybook reading activities, and determining storybook reading-related trends. Then data from all sources were pieced together so that the complex pattern of related events and interaction in the daycare center could be understood more fully and so that "thick description" would result. The emergent storybook reading "picture" was then discussed in light of a composite picture of the positive home literacy environment as provided by the research literature. To ensure the dependability and confirmability of research findings, the researcher discussed emerging data and interpretations with the chief caregiver. Dependability and confirmability were also established through an audit inquiry (Lincoln & Guba, 1985). A master's of education student with a specialization in early childhood education and knowledge of naturalistic research techniques independently interpreted 10% of the data to establish the degree of consistency in interpretation (90%).

RESULTS AND DISCUSSION

The Daycare Context

In terms of a human being's basic needs, these children were well cared for. The children were well fed and were allowed ample sleeping time on comfortable cots in a well-ventilated room. The daycare center itself was clean and safe. Children's lives were regular and predictable, and the daycare workers, all but one of whom had considerable experience, were often affectionate and were always close at hand. These conditions must be considered exemplary because nutrition, cleanliness, physical safety, and affectionate attention are central considerations of the daycare situation (Maynard, 1986). The daycare owner and chief caregiver, Greta, had received 3 years of early childhood training in her native Germany 25 years ago. The childcare experience of Carol and Mary, the other caregivers, resulted from the raising of families. All caregivers ranked patience as the most important quality necessary for a caregiver, and all were happy with their jobs.

Storybook Reading

With regard to storybook reading, children were read to daily. During this, the older children often cuddled the younger children and everyone was comfortably seated close to both the storybook and the storyteller. The sessions were not consciously instructional, but many ideas potentially related to literacy were taught (directionality, for example). Although these observations were viewed relative to the research literature in a very positive manner, most other findings were not quite as positive. These other findings, or trends, will now be described and discussed in the context of a representative story reading. The book involved in this reading was *Mary Poppins*. The reader was the chief caregiver, Greta.

Child-initiated interaction. Of the 19 interactions that took place in this story reading, only one was initiated by a child. As a child realized that he had a tape recording of *Mary Poppins* at home, he exclaimed, "I have that on tape." Greta responded, "OK. OK. That's very good," and continued the story reading. In this interaction, it seemed that the caregiver recognized a child's legitimate comment but quickly resumed the storytelling so as not to interrupt the flow of the story.

Although the caregiver managed this child-initiated comment in a positive manner, the low incidence of child-initiated interaction may not be viewed as positively. Brailsford (1986) has shown that during parent-child storybook interaction in which children developed high-print awareness and became readers-in-progress, parents asked few questions but responded eagerly to child-initiated queries and comments. Heath (1983) has provided complementary evidence. She claims that during less-than-ideal storybook interactions, parent-initiated questions dominate storybook encounters. In her study, a parent-initiated questioning pattern resulted in children experiencing a limited readiness for school.

Caregiver-initiated discipline-related interaction. Of the 19 interactions that took place, only 2, or about 10% of the total interactions, were discipline related. In one instance, the caregiver said to a child who stood to see the pictures but blocked another child's view, "Can you sit down because Stephen is a bit short?" In the other instance, the caregiver said, "Just leave it please" to a child who was playing with a nearby musical instrument. These interactions typify the caregiver's discipline method during storybook reading: deal with situations as they arise, quickly and quietly, and then immediately resume the reading of the story. Such utterances may be viewed positively because in a minimum length of time with minimum further disturbance "problems" were resolved and the storybook reading resumed. On the other hand, it may be argued that the controlled (that is, not spontaneous) atmosphere resulting from this management system may reduce the positive impact of the storybook reading event. Characteristic of all positive parent-child storybook reading sessions is the joyous, spontaneous atmosphere of give-and-take between parent and child. This type of atmosphere was absent from the daycare reading sessions.

Caregiver-initiated questions that did not elicit a response. Of the 19 interactions that took place, the children did not respond to eight (or 42%) of these questions. Four (or 21%) of these interactions concerned questions or comments about vocabulary. The caregiver allowed a response wait time of 1.5 to 5 seconds in all cases, but in the end the caregiver provided a definition or elaboration of the necessary vocabulary concept in question, for example:

Story: "Come follow me," Mary Poppins called over her shoulder, and away they all went to the call of the horn past the huntsmen and hounds.

Greta: What are hounds? [3.0 sec.] Dogs. Have you ever heard of hounds? Hounds are dogs.

Such assistance with difficult words is consistent with what a parent in the home environment may offer. In the other four interactions that did not elicit a response from the children, wait time was 0 seconds.

Caregiver-initiated questions that did elicit a response. Of the 19 interactions that took place, the children responded to 8(42% of the total number of interactions). Of these, 2 interactions, or about 10% of the total, were attempts by the caregiver to contextualize the story in the life experiences of the children. For example, in one interaction it appeared that the caregiver wished to contextualize the story event of house cleaning within the child's own world knowledge and experience:

Story: Mary Poppins, the new nanny, had just taught Jane and Michael a game called: "Well began is half done or tidy up the nursery." [*sic*] It was so much fun that when it was over and the nursery was neat as a card of new pins, Michael wanted to do it all over again.

Greta: Do you like to clean up? [1.64 sec.]

Clara: Yeah.

Greta: You do like to clean up.

Stephen: I like to go [sweeping motion with his hand].

Greta: You want to go like [sweeping motion with her hand]. All done. Magic wand and all done.

Stephen: And, I clean up like this, I go [sweeping motion with his hand].

Greta: Oh, I see.

With this, the storytelling resumed. Hayden and Fagan (1987) claim that positive parent-child storybook interaction is characterized by such contextualization. However, the overall success of the caregiver's contextualization efforts may be questioned because in this representative attempt, only one child truly interacted. The question then becomes: Does such interaction with one child have a "carry-over" or vicarious contextualizing effect for the other children? In other words, can the children make the transfer to their own experiences? Although it is conceivable, it seems highly improbable that creating a support system based on one child's personal experience will serve to contextualize the story and thereby enhance story comprehension for all children. In this study, however, there was no evidence to support or deny the success of the contextualization effort for the children.

The remaining six interactions could all be classified as caregiver-initiated, literal comprehension questions. Through questions, the caregiver encouraged the recall of detail, specific characters' actions, and the sequence of events. In the process of asking these questions, she often drew attention to the picture clues, for example:

Greta: And today he was doing what? [1.72 sec.] [referring to the picture of a character painting pictures on the sidewalk]

Jenny: Pictures.

Greta: Painting pictures on the?

Jenny: Sidewalk.

Greta: The sidewalk.

Drawing children's attention to picture clues may further their understanding that pictures should be attended to; Sulzby and Teale (1987) claim that a parent should show a child what to pay attention to. Indeed, during the approximate five seconds given to look at each double page of the storybook, most, if not all children would gaze intently at the pictures. Such picture gazing may further children's realization that pictures provide semantic support for the words being uttered: furthermore, children may come to understand Pellegrini's (1985) notion of "frozen discourse" with specific regard to pictures. In other words, the children may come to understand the story as being somehow "frozen" in the pictures of the storybook, separate from the reality of the daycare time and place. Finally, asking the children to look at the pictures may intensify their enjoyment of the experience. For all these reasons, asking literal-level comprehension questions while drawing attention to picture clues may help children learn about literacy.

However, some researchers (e.g., Lapp & Flood, 1986) believe that this type of questioning does not go far enough or is misdirected in focus. First, the questions required the use of only a few literal-level comprehension skills; others, such as extracting main ideas or understanding stated cause-

and-effect relationships, were left unexplored. Second, response-type questions and comprehension questions at the inferential and critical levels were not addressed. Emphasizing literal-level comprehension questions may thwart divergent response capabilities; moreover, the continual demand for convergent or correct answers may establish a nonrisk-taking environment. Evidence seems to indicate that this occurred. The respondent to all six literal questions was an older child who could provide an unquestionably correct answer based on either picture clues (e.g., "And today he was doing what?") or definite personal knowledge, for example:

Greta: Are you sure you saw the movie?
Clara: Yes, I'm sure.
Greta: You did. And you liked it?
Clara: Yes.

Moreover, when a child did respond, the correctness of the answer was immediately assessed by the caregiver, for example:

Greta: What are they doing? [2.4 sec.] What are they doing?
Sandy: Dancing.
Greta: Dancing. That's right.

Another example that illustrates the dominance of caregiver- initiated convergent questioning is as follows:

Story: Soon they were seated at the best table with waiters popping about to serve them.
Greta: What did the waiters serve? [3.1 sec.] What do you think?
Child: Flowers.
Greta: No, you wouldn't eat flowers. You might decorate the table with flowers. What would he serve? [1.9 sec.]
Child: Hungry.
Greta: Tea. Tea and maybe some biscuits. [2.8 sec.]
Story: "Now then," said Mary Poppins studying the menu, "what would be nice? Oh, they have some raspberry and frosted cakes and tea."
Greta: Even more fancy.
Story: "Anything for you," said Mary Poppins. "I would especially like a pink one! Order what you will."

As with previous interactions ("Do you like to clean up? Do you like to clean up?" and "What are they doing? What are they doing?"), the caregiver asked the question twice before the children answered. The question was asked in the past tense; according to the picture clues, the child who responded "flowers" was indeed correct. However, it soon became apparent that the caregiver had meant the question to be speculative (i.e., "What *would* he serve?"). The caregiver did not respond to a supplementary attempt to answer her question ("hungry") and then proceeded to offer what seemed in her estimation a correct response ("Tea. Tea and maybe some biscuits."). After reading the next line in the story, the caregiver offered the thought "even more fancy," meaning that what the waiter had served was "even more fancy" than the "tea and biscuits" that she thought would be served. Although this interaction may model a reader making a prediction about a text and then reading to confirm or refute the prediction, the "even more fancy" statement was expressed so that it seemed to be part of the text, which may have reinforced the notion that when the caregiver asked a question, a convergent, correct response was indeed expected.

The final interaction of this story-reading session encapsulates the observed pattern of caregiver-initiated literal-level questions and also illustrates the results of such interactions.

Greta: Did you hear what I said? What happened? Can you tell me what happened? Can you tell me what happened, Clara? What happened? [4.5 sec.] What happened? They had a lot of fun at first, but what came down then? [1.7 sec.]

Jimmy: Rain.

Greta: Rain. That's right. And what did they do? [1.4 sec.]

Jimmy: They put up an umbrella.

Greta: They put up an umbrella and then huddled under the umbrella, right? And what happened to the picture on the sidewalk?

Child: Well [child speaks: "They melted" at the same time as Greta]

Greta: They melted away. They ran away. The puddles ran away.

Story: "Oh Bert," said Mary Poppins, "all your fine drawings." "There are more where they came from Mary my dear," said Bert, and he smiled as if in his eyes she still was a lovely lady.

In this final interaction, the caregiver asked five times "What happened?" and then asked for literal recall of the sequence of events that followed the characters having "a lot of fun at first." The oldest child provided answers that were judged correct by the caregiver. Then the caregiver finished answering her own questions in a louder voice than the child's attempts. This pattern of adult-initiated questions followed by a child's convergent, correct responses was characteristic of a community of people studied by Heath (1983). Heath concluded that this question/response pattern did not help the children to synthesize parts into wholes, contributed to a diminished understanding of main ideas, and was responsible, in part, for children's limited readiness for school. Furthermore, Nurss, Hough, and Goodson (1981) claim that a preponderance of questions that require "accurate verbal responses" may be linked to a lack of expressive language ability.

CONCLUSIONS

To summarize, then, the children participated in storybook reading in the daycare center by listening, by looking at the pictures, and by rarely interacting except sometimes to respond to literal-level questions. This pattern of interaction could not be characterized as either joyful or social and therefore could not be deemed equivalent to the literacy experience provided by the positive home environment.

Results suggest that up-to-date inservice training should be offered to caregivers if the children's best interests with regard to literacy learning are to be met. For example, an early childhood expert with further expertise in the area of group care might visit daycare centers on a regular, perhaps monthly, basis to help the caregivers promote preschool literacy learning. To be most helpful, the visiting expert and caregivers should develop a collaborative working relationship. Such inservice training could focus upon how to structure storybook sessions so that all children experience story reading as an interactive, joyous occasion. To maximize participation, caregivers could read to individual children during free-play time and also read to children grouped by age so that the younger children would have greater opportunity to participate actively. These activities could replace or supplement the large group reading sessions. Furthermore, caregivers need to learn to encourage interaction by asking personal, divergent-type divergent questions as opposed to literal, convergent-type questions.

The findings of this study also provide a basis for further research efforts. First, this study was conducted at a middle-class, government-approved daycare center in an urban setting. To foster better understanding of literacy learning in daycare centers, similar studies should be undertaken in different socioeconomic situations in both urban and rural settings. Second, this study described the preschool literacy world of children at a daycare center. In order to understand the daycare child's entire literacy world, the child's literacy world at the daycare center and at home should be studied concurrently. Finally, the findings of this study suggest the need for ongoing inservice training for caregivers. Future research efforts should be directed toward the development, implementation, and evaluation of such a crucial program.

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RESEARCH AND PRACTICE IN TEACHER EDUCATION

Preservice Teachers' Reminiscences of Positive and Negative Reading Experiences: A Qualitative Study

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Preservice teachers bring a wealth of school-related experiences to their professional education programs. Unlike prospective doctors, lawyers, or businesspeople, aspiring teachers have spent many years of their lives inhabiting the very workplace in which they will ultimately perform. The experiences accrued during their years as students dramatically shape their views of what teachers, schools, and education itself are all about. As Britzman (1986) suggests, preservice teachers

> bring to their teacher education more than their desire to teach. They bring their implicit institutional biographies—the cumulative experience of school lives—which, in turn, inform their knowledge of the student's world, of school structure and of curriculum. All of this contributes to well-worn and commonsensical images of the teachers' work. (p. 443)

If we as reading educators are seeking to influence preservice teachers' beliefs about the nature of effective reading instruction, we must first understand our students' "implicit institutional biographies." We must examine their images of teachers' work related to reading in order to capitalize upon those behaviors they viewed as positive and to provide them with a repertoire of alternatives to those behaviors they viewed as negative or detrimental.

In an effort to understand those experiences that have positively and negatively impacted prospective teachers' views about reading, Johns and Galen (1977) asked 14 preservice teachers to reflect upon their own reading instruction, which occurred predominantly during the 1950s. The study described herein sought to extend and update Johns and Galen's (1977) work to provide a portrait of the reading-related experiences of preservice teachers educated primarily during the 1970s.

METHOD

Procedures

The subjects for this preliminary study were more than 150 undergraduate elementary education majors who were students in a reading methods course. The vast majority of the students held a class rank of junior or senior, and 95% were between 19 and 20 years of age. The remaining 5% were non-traditional students ranging in age from 28–40.

Subjects were asked to reflect upon their previous school-based reading experiences, both positive and negative. Data were collected through the use of the Critical Incident Technique (Flanagan, 1954), which allows the researcher to gather important facts concerning particular behaviors in defined situations. For this study, students were asked to respond in writing to the following statements:

> Think about experiences in your past that involved reading in some way. These experiences may have occurred at any time before or during your 12 years in school. Describe a specific incident that caused you to view reading in a positive way. Describe exactly what happened that caused you to view reading positively as a result of this experience. Think about another experience from your past that involved reading in some way. It may have occurred at any time before or during your 12 years in school. Describe a specific incident that caused you to view reading in a negative way. Describe exactly what happened that caused you to view reading negatively as a result of this experience.

Analysis

Incidents were first sorted based upon whether they represented positive or negative reminiscences. Each was then analyzed through categorical analysis (Spradley, 1979). Through this procedure, descriptive domains or categories were established based upon the type of experience described by the preservice teacher.

RESULTS

The results of the study are revealing in terms of what they tell us about the reading-related experiences of our students, the vast majority of whom attended elementary school in the late 1970s and early 1980s. Whenever pertinent, specific examples of students' own comments provide further illumination regarding each topic being described. Table 1 displays the domains and categories that comprise the results.

Negative Experiences

The most frequently mentioned negative experiences pertained to reading aloud in class, which usually occurred as part of round-robin activities. Inter-

TABLE 1
Domains and Categories of Reminiscences

Negative	Positive
Reading aloud	Books read aloud
Round-robin reading	Extension activities
Required reading	Reading achievements
Book reports	Self-selected reading
Kits	Positive teacher affective behavior
Differential or negative treatment of students	Encouragement from parents & relatives
Reading groups	
Special classes	

estingly, both students who believed themselves poor readers and those who saw themselves as good readers viewed these activities negatively. Shy students mentioned their hatred of being "put on display," poor and good readers alike remembered the humiliation of mispronounced words, and almost all respondents referred to the jeering remarks of their fellow students when they made oral reading errors. One student response is representative of the prevailing view:

> My worst fear was reading aloud in class. Once a week a row of students was chosen to do the oral reading from their basal text. What fear! Would I stumble, stutter, or at worst skip a line? Everyone's eyes and ears were trained toward the lucky reader—about 35 observers waiting for a blunder.

Other frequently mentioned negative experiences pertained to required reading books, book reports, and SRA kits. The requirement that students read particular books selected by the teacher was often a source of negative feelings. As one student stated:

> The reading the book part was fine—the books she chose for us were not. She chose books that were not related to our interests, such as girlish books for the boys and sports-related books for the girls. It totally turned me off to reading. She said it would broaden our interests.

Most students reported dislike of written book reports primarily because they had been given no choice in selecting the books. These reminiscences reflected elementary school as well as high school experiences.

SRA kits were viewed almost as negatively as required reading books, largely because of the way they were used rather than their actual content. Students stated that they were often required to "do SRA" for the entire period; one even stated that reading instruction for the entire year consisted of completion of the SRA kit.

A number of respondents described teacher behaviors that negatively affected their feelings about reading. Differential treatment of students by ability was frequently mentioned. As one student stated, "The kids in the top group always got to have fun, while the kids in the low group were always doing busy work." Several students who were in the higher groups expressed sympathy for those in the lower groups. One student had particularly vivid memories of teachers' treatment of children in the various groups:

> In the third grade the class was broken into various reading groups based on perceived reading levels. I personally was placed in the middle group, yet I do recall the negative treatment and condescending attitude of the teacher toward the lower group.

Other negative teacher behaviors involved humiliating students, becoming angry with students for mispronouncing of words, and other actions that can best be described as insensitive. Some respondents described how the teacher "rushed" students, made them feel that they were "a bother"; others described how teachers simply refused to accept viewpoints other than their own. This occurred particularly often with high school teachers who refused to acknowledge interpretations of literature other than their own. As one student stated, "In high school, when I gave my views on what I thought the poet was trying to say, the teacher acted like I was from another planet."

A number of these preservice teachers viewed reading group experiences negatively. Many respondents expressed dismay at having been placed in the low or even the middle reading group. They described their clear understanding, even as first graders, that they were somehow "not as good" because they didn't "make" the top group. Even some good readers viewed these experiences as negative because they were "singled out." One student described this experience:

> Because I was smart I had to go to the next grade up for reading. This went on for seven years and I always felt singled out and weird. When I got back to the classroom, I always felt I had missed out on something. ...

Special classes, even those in advanced reading or speed reading, were generally disliked. Students expressed great frustration with speed reading classes, suggesting that teachers simply "set the machine" and failed to attend to students' individual needs and capabilities.

Positive Experiences

The most frequently identified positive memory related to listening to books being read aloud. The respondents most often described teachers who read aloud daily. Most of these teachers were at the elementary level, but some were high school English teachers. In addition to mentioning specific books that were read, students provided details about how the teachers read aloud, that is: "She read with great enthusiasm" or "She told us to close our eyes and imagine what we were hearing." The following comments illustrate the importance preservice teachers accorded these experiences:

> In fifth grade our teacher read aloud to us on a regular basis. He created a very pleasant and relaxing experience. I will never forget him.
>
> I loved to have someone read aloud to me. My imagination went into overdrive. It was so much fun.
>
> In the sixth grade my teacher read aloud to us. This was amazing to me, because usually after the third or fourth grade, most teachers stop.
>
> In elementary school our librarian would read a picture book to us. Everything about the way she read was perfect. She would sit up on a chair. She looked like royalty, and the way she lifted her glasses to her face from a hanging chain was like preparation for a religious ritual. We all became quiet when the glasses were set. Her hands held the book like a baby, and it seemed like the book was always brand new, with that protective plastic covering. Then she began reading.
>
> My sixth grade teacher was constantly reading us stories....I loved the way she read...it was as if she put all her energy into it and as if she was a character....She made the stories come alive!

The next most frequently identified positive memory related to participation in book extension activities. Students described puppet shows, plays, and learning stations as favorite extension activities. Others mentioned creating commercials for books, comparing books with the movie versions, cooking, story writing, or making class books as other favorite responses activities.

Students remembered a number of events pertaining to particular reading achievements positively. Many times, these achievements involved being moved into a higher reading group or successful "reading aloud" experiences. Others entailed being allowed to tutor other children in reading, participating in a Young Authors Program, or "breaking the code" for the first time. This was a particularly significant event for at least one student: "I remember buying a book in grade school which was my favorite (*Where the Wild Things Are*) and finally being able to really read it after not knowing what the words actually were."

Many students mentioned the joy of self-selecting books and being given time to read them either at school or at home. Others mentioned the impact of specific books including the Little House books, *The Outsiders, White Fang, The Contender,* and *The Secret Garden.* Sometimes these books were the catalyst that turned a nonreader into a reader. One respondent's comments illustrated the power of a good book:

> I was a child who did not like to read. I was bad at it and thought it didn't do me any good. In high school I had to read *The Outsiders.* This is the first book I ever read which didn't bore me. I couldn't wait to finish the book. It was the first time I ever enjoyed reading.

Positive teacher affective behaviors were remembered with fondness. One student described a teacher who "encouraged us when we read, as if to say, it's OK to make a mistake—just let me help you be more sure of yourself." Students consistently mentioned teachers who expressed confidence in their abilities as readers and had high expectations. One respondent's comments suggested how teacher expectations for learners can dramatically heighten a child's confidence:

In one reading class, we were made to feel as if we all possessed the ability to become proficient readers. The assignments were positive and we could progress to another group if we felt ready. We felt like good readers because we were treated like good readers.

A few students mentioned parents or relatives who had successfully piqued their interest in reading. These individuals most often read to the respondents, bought them books as gifts, or listened to them as they read.

DISCUSSION

At the end of the Johns and Galen (1977, p. 254) article, the authors ask: "In the year 1992, some of today's first graders will be seniors in college. If asked to recall their early impressions of reading, how will they respond?"

The results of this preliminary study suggest that the preservice teachers of the 1990s responded much like Johns and Galen's (1977) subjects. As did the students in the earlier study, these students disliked round-robin oral reading experiences immensely. As was true of the earlier respondents, self-selection of reading materials was important; required readings were unpopular even with those who viewed themselves as good readers.

Reading groups were a central aspect of reading instruction in the classrooms described in both studies. Apparently, the use of the standard three reading groups continued largely unchanged in many classrooms during this 20-year period. Students continued to define reading achievement largely in terms of group placement and had positive memories of experiences in which they went "up a group." Many memories of reading groups were negative, however, in both studies. Respondents then and now were painfully aware of the differences in teacher attitudes toward and activities completed in the different reading groups.

Finally, in both studies, teacher behaviors, both positive and negative, had a profound impact upon these students' views about reading. The actions of the teacher, whether to promote or inhibit a love of reading, were noted over and over again as important.

There were two key differences between the findings of the Johns and Galen (1977) study and this one. Students in this study expressed considerable pleasure in classroom activities unrelated to reading groups. They enjoyed being read aloud to, as did students in the earlier study, but they also noted that their teachers had involved them in literature extension activities that they found to be enjoyable and meaningful.

Second, these respondents most often identified teachers who had helped to develop their interest in reading. Only three or four students mentioned parents or other adults who helped them in this area. In the Johns and Galen (1977) study, the opposite was true. Parents were most often the ones who developed their children's interest in reading. These findings suggest that perhaps teachers of children in the 1970s provided more activities designed to develop student interest in reading than those in the 1950s. Also possible is that parent involvement has changed.

Interestingly, these student reminiscences provide support for the kind of reading instruction being advocated by whole language enthusiasts. Daily read-aloud experiences, the use of literature, creative extensions of literature, meaningful silent reading activities, and less reliance upon ability grouping are just a few of the teaching approaches that would be viewed positively by the respondents of this study. How will preservice teachers in the year 2010 respond when asked to reflect upon their past reading experiences? Will their responses reflect the impact of the whole language movement? Only time will tell.

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Preparing Preservice Teachers for Remedial Instruction: Teaching Problem Solving and Use of Content and Pedagogical Knowledge

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The teacher education reform movement of the last decade suggests that the learning experiences of future teachers should be situated in problem-solving environments that require the analysis of complex and authentic classroom problems (Berliner, 1985; Clandinin & Connelly, 1984). Most researchers and teacher educators agree that teaching requires not only knowledge about what to do but the ability to know when and how to use this information when confronted with problems and unexpected situations (Clark, 1988; Leinhardt & Greeno, 1986). Yet Goodlad (1990) and others suggest that teacher education programs do not adequately prepare teachers for the realities of complex classroom situations. Goodlad argues that teacher educators have made little progress in responding to the critics of the 60s (e.g., Sarason, Davidson, & Blatt, 1962) who have indicated that teachers often have difficulty connecting information learned in teacher preparation programs to information needed for evaluating and responding to problems and unexpected situations in the classroom. Teacher educators indicate that methods courses, microteaching, and other preteaching experiences often fail to equip teachers with problem-solving strategies because they do not reflect the "intrinsic uncertainty of teaching" (Clark, 1988, p. 10) and may present a simplistic or unrepresentative view of teaching (Ball & Feiman-Nemser, 1986; Clark, 1988).

Calls for the reform of preteaching experiences have direct implications for examination of reading methodology courses and related field experiences if our goal for these courses is to prepare teachers to approach literacy instruction from a problem-solving perspective. Classroom and reading teachers are constantly required to make informed decisions that may or may not result in appropriate reading instruction for classes with a wide range of student abilities and backgrounds.

At Vanderbilt University, we are implementing a project, partially funded by a Sears, Roebuck Foundation grant (Risko, 1989), in which instruction is anchored in video-based contexts for the analysis of problems confronting teachers. We propose that anchored instruction (Bransford, Vye, Kinzer, & Risko, 1990), coupled with case methodology, is one way to create shared learning experiences between a professor and students and to help future teachers recognize similarities between information learned in college classes and information required for successful teaching in real classrooms. Our anchored instruction uses videodisc and hypercard technology to foster a learning environment in which the preservice teacher is the producer of knowledge rather than a passive recipient, and, to this end, emphasizes generative learning activities, cooperative learning, and problem-oriented activities. Case methodology, as described by Christensen (1987) and Learned (1987), is a process-oriented approach that encourages problem formulation and problem solving. Our cases, on videodisc, represent complex teaching situations and contain multiple sources of embedded information.

In two previous papers (Risko, 1991; Risko, Yount, & Towell, 1991), we presented the rationale and design for our video-based case methodology. The goal of this paper is to explore the use of our methodology within a college class. Multiple data sets, collected across several semesters, are being analyzed to evaluate this approach on our students' learning. This paper focuses on one important phase of our research, an analysis of communication patterns among class members during the implementation of our instruction. We present patterns emerging from our analysis of classroom discourse data to describe the social dimensions of communication occurring in our classroom and to identify the nature of idea generation and problem solving occurring during instruction. This analysis allows us to make inferences about how knowledge is constructed and communicated and how information is used for solving problems.

METHODOLOGY AND PROCEDURES

It has been observed that social participation in collaborative problem-solving environments can positively influence students' learning and reasoning (Heath, 1991). Discourse data were examined to trace the process of students' learning and participation during our case-based instruction.

Setting and Participants

Our research was conducted in the undergraduate course Remedial Reading and Practicum. This course is required for elementary and special education majors. All preservice teachers enrolled in this course previously completed a developmental reading course, a language arts course, and an accompanying practicum. For the first seven weeks of the semester, regular class sessions were held on campus twice a week. During the next five weeks, each preservice teacher was assigned to a practicum setting and was responsible for planning and implementing a reading instructional program for a low-achieving student. For the last week, the preservice teachers returned to the college class and shared information about their practicum student following a case format.

Instruction in the College Class

Across all class sessions, the instructor and students participated as a whole class in examining the video-based cases. Three cases recorded on videodisc were used to explore authentic classroom and Chapter I situations. Each case contained various forms of naturally occurring classroom events (e.g., teacher-student interactions, teacher questioning, student participation in reading and writing activities) demonstrating factors that contribute to the complexity of reading problems. The video cases were supplemented by related text materials and information corresponding to each case (e.g., children's assessment protocols, teachers' lesson plans, samples of student writing) to provide a detailed study of each student's reading abilities and problems. Taking advantage of the rapid, random access and freeze-frame capabilities of videodisc technology, the professor and students often reexamined scenes and cases for different reasons and to access information that was difficult to describe in written or verbal accounts (e.g., teachers' nonverbal cues).

Hypercard technology was developed also to enhance the effectiveness of instruction by encouraging access to multiple sources of information. From a main menu, numerous cards were accessed on the computer for exploring a wide range of factors (e.g., text characteristics, instructional context, beliefs/attitudes) that may contribute to target reading problems. Such technology supported the use of videodiscs to facilitate case analysis from multiple perspectives and to facilitate multiple connections between text and video information.

Data Collection

The data were collected during spring semester, 1991. The 12 students enrolled in the course were either juniors or seniors. The first author taught the course. The other two authors became observer/participants in the course and conducted an in-depth analysis of our approach. Daily field notes taken during our 14 classes were transcribed for use in a microanalysis of patterns of classroom discourse and to generate descriptions of opportunities for learning that occurred between the instructor and students (Wood, 1989, 1990). Our analysis of classroom discourse was conducted within the tradition of qualitative research in which an interpretative stance guides the data analysis (e.g., Atkinson, Delamont, & Hammersley, 1988; Firestone, 1987; Jacob, 1987, 1988).

PATTERNS OF DISCOURSE WITHIN VIDEO-BASED CASE METHODOLOGY

Four patterns emerged from our analysis of discourse data. The patterns presented in the following sections were consistently documented across class sessions. Segments taken from our discourse data are used to illustrate how the professor and students participated in this instruction.

Active Engagement and Generative Learning of Students

One goal of our project was to invite students' active participation in their own learning. We hoped to move away from a professor lecturing about what is in his or her head by inviting students to generate their own questions and hunches to guide case analysis. Observations of our students' participation in class discussions suggest that they were actively engaged in exploring our cases. The following examples illustrate the nature of student involvement. Within each excerpt of the discourse, "R" designates the professor and a different letter codes each preservice teacher.

In this episode (occurring January 21), the preservice teachers were introduced to their first case, Emma. After reading a general description of Emma provided by her reading teacher, they observed an interview in which the reading teacher is describing Emma and the instruction in the Chapter I classroom.

R: Here we have a general description of Emma provided by her classroom teacher—What do you notice? Are you learning something about her instructional context?

A: It is a skills-based Chapter I class.

R: How would you describe the curriculum?

K: A lot of skills-based instruction but not creative things.

R: You are already forming an hypothesis. I'll write this at the bottom. Any others?

K: I wonder about creative ideas—writing, has it been part of her instruction?

R: Another hypothesis—something to look for as we examine instruction.

The professor records the preservice teachers' responses on one of many charts being developed for Emma's case. In the preceding and following statements, the preservice teachers hypothesize about Emma's instruction and generate questions for further analysis. The professor records information and mediates the discussion by suggesting how to categorize the information being generated (i.e, students are forming hypotheses for further study). The discussion continues:

A: She can't elaborate.

R: And the teacher told us her inferences are weak.

J: Fluency is a problem.

R: Let's put that comment under reading behaviors and I'm going to add vocabulary as a possible problem. That was suggested by the teacher as a problem. Anything else?

J: Does she read outside of class? Does she go to the library—what are her experiences?

R: Good point—if we find that the instructional program is narrow, what other kind of reading experiences are provided? What else?

Kt: How well does she do in other subjects?

A: Let's check her background, home, language, anything that might influence her.

Illustrated in this excerpt is the shared participation of the group members, including the professor. Instead of dominating or directing the conversation, the professor acts as a participant. Much like the other members of the group, she mediates learning by adding information and elaborating on others' ideas. This type of participation seemed to open possibilities for further conversation and for additional contributions by other students. These patterns are documented further in our second example, which occurred the same day.

In this episode, the preservice teachers are viewing Emma's Chapter I teacher interviewing her. They have just watched the teacher explain that she will ask Emma some questions about herself and her reading habits. The professor stops the disc and initiates the following discussion.

R: What is the purpose of an interview?

An: To find out more about a student than just how he or she performs on school work.

R: Other reasons?

Kt: To learn about a child's interest

R: Would you use a structured or informal procedure?

M: Probably to find answers to specific questions—structured.

R: So you are suggesting to go in with a plan, a list of questions. How is this different from an informal procedure?

M: You go in just to talk.

Kt: A structured interview provides answers to specific questions as compared to an informal interview where you look at patterns as a whole.

R: When can an informal interview occur?

Ju: Some question may spark something that leads to more information.

J: Maybe you are helping a child with an assignment, and this problem may occur and this leads to talking more about it.

Notice how students build on each others' ideas in a natural, conversational manner. Most of the discussion has focused on structured interview procedures, and this information is developing accurately. The professor notes that the concept of informal interviewing will be revisited when Emma is interviewed by her teacher during a reading assignment. Students conclude their viewing of the interview with Emma.

R: What kind of interview was this?

K: Structured—following a set of questions.

R: What are some of the things we've learned about her?

K: She does like to read some.

Ju: She is very interested in basketball.

R: What else does she like?

Ju: Comics.

J: She likes Ramona Quimby.

R: Time after school.

Ju: Nintendo.

K: Likes TV three hours a day—could be worse.

Ju: Could she be spending some time playing Nintendo?

J: She sounds like a latchkey child so TV could be used for companionship. [Goes on to describe her own experiences as a latchkey child growing up with a mother who is a teacher. Talked about watching television after school as a "time filler" until her mother came home.]

A: There is not much reading in the home.

R: She did mention a few magazines, like *Jet* and *Sprint* that she reads.

K: I thought her reading was a lot more hopeful than I expected.

A: I think she is clever, bright in general and kind of "with it."

R: Where do we put that?

J: Under hypotheses about Emma's abilities.

K: Social studies is not activity based at all.

R: It does sound like a text-based program [based on Emma's description].

K: Emma is pretty confident during the interview.

R: Good observation. What are her goals?

K: She wants to be a librarian.

R: What about the interview itself—as an instrument for assessment? What did you notice?

Kt: The teacher was very confident. She used open-ended questions. This made Emma feel comfortable.

A: After she [teacher] asked a question, she then asked follow-up questions.

R: The teacher did take time to explore interests. What else did you notice?

Mc: This was more like conversation.

Ju: The questions flowed.

R: The teacher had a plan for the questioning in her head, but it didn't feel like a test.

J: I need a tape recorder for this.

Ju: Yes, the teacher wasn't writing after every statement.

R: It seems that you are saying that you want the interview to flow like a natural conversation.

Several observations can be made about the above example. First, 8 of the 12 students actively participated in this three- to four-minute conversation. The discourse pattern indicated that the class participants (including the professor) listened to each other and either elaborated on one another's comments or extended the discussion by adding their own insights and/or summary statements. Second, the preservice teachers spontaneously made connections between case information and prior experiences (e.g., latchkey child), and case information and text readings (e.g., structured versus informal interview information). This observation is important because it tells us more about the advantages of shared-learning contexts for the analysis of problems. Too often, class instruction follows a lecture mode in which the professor refers to text and personal examples to illustrate target concepts. This may be followed by the students' sharing an interpretation of the readings or a personal experience. Such instruction is linear, often forcing students to make sense of what may appear to be disparate or unimportant information. In contrast, information shared within a rich context of commonly shared experiences enables students to make connections across ideas and to recognize how to apply relevant knowledge to specific conditions and situations.

Third, the preservice teachers' metacognitive awareness of the importance of specific information, such as interview procedures, was demonstrated in their spontaneous statements. Instead of being *told* what experts know about interviewing (facts) or how experts conduct interviews (procedures), the preservice teachers generated this information (e.g., use of tape recorder, use of conversational style) from their examination of the case.

As indicated above, these first two examples occurred on the first day of our anchored instruction. Even on this first day, the preservice teachers actively participated in the case analysis to frame problems and to suggest questions for further study. Instead of the professor doing most of the talking and presenting his or her interpretations or "the conclusions in a field of intellectual inquiry" (Bruner, 1963, p.14), learning is centered by students' own inquiry, formulation of hypotheses, and generation of problems and problem solutions.

Mediated Learning Has Multiple Textures

The preceding excerpts are shared to illustrate the active participation and generative learning of the class members. These same excerpts can be reexamined to illustrate another characteristic of our methodology. Just as our cases are revisited in class to examine information from multiple perspectives, these excerpts can be reexamined to delineate multiple patterns emerging simultaneously from our discourse data.

Embedded in the preceding excerpts are some illustrations of the many textures of mediation that we observed. The students and professor guided one another's learning by initiating questions (e.g., "Has writing been part of her curriculum?"), by summarizing (e.g., "It seems that you are saying that you want the interview to flow like a natural conversation."), and by elaborating (e.g., "TV could be used for companionship."). Students also referred to their readings to support their ideas and to enhance the class discussion.

The instructor, too, referred to supporting literature to encourage further thinking and elaboration. An illustration of this occurred on January 21 after a student talked about the cycle of failure that was so prevalent in a former practicum site. The following occurred.

R: That reminds me of the article "3,000 Paper Cranes."

K: Yes, kids need to really get into something in order to believe they can do it. In that story it was a fluke—community involvement. Kids in lower reading groups don't get into neat things.

On another occasion, related literature was explored in depth within the context of the cases. On February 13, the class examined Emily, the second case study. During an interview with her mother, Emily was described as having a "visual perceptual problem."

R: Emily was described as being unsure of certain letters and words—*dog, bag, pet*, or *bet*. May need to think of what Wiesindanger and Bader would recommend. Let's go back and remember their article [Wiesindanger & Bader, 1987]. First step—put word in context. Second step—children generate the word—lots of sentence formation. What's the purpose of context?

Kt: They may be able to see more how it's used in a sentence.

This discussion continues with the students and professor describing each step of the procedure until one student summarizes the purpose of the authors' recommendations.

M: Starts out in context, then practiced, put back in context, combines phonics and meaning—to provide different strategies.

Text readings were integrated into the discussion to help students analyze issues and problems from different perspectives.

Another form of mediation originated from students' spontaneous comments that alerted others in the group to the importance and relevance of information being studied. For example, on January 23, the students discussed Peter Johnston's (1985) article in which case information about three adult nonreaders was presented. The following dialogue occurred.

An: This was an important handout. It is great—student teachers need to know that people are older than one or two years old that can't read—personally, I didn't know.

K: Wild that people can get through school and can't read. I remember reading in the *Read Aloud Handbook* and the statistics were shocking about who/how many can't read. [She goes on to describe what she read.]

Learning was also mediated by the preservice teachers' introduction of concepts and vocabulary that became part of the classroom discourse, vocabulary that took on its own shared meaning within the course and served as a referent to a set of complex ideas. For example, on January 21, "M" described a former practicum experience with a group of students described as low readers. "M" told us that these students were assigned to old basal readers "containing language that was stilted and characters who were uninteresting. Students didn't like to read because of the books." As she described the poorly written stories, she introduced the word *icky* to represent these text characteristics.

This word was used repeatedly throughout the semester when discussing poorly written texts. For example, on February 4, the professor and students were discussing problems with paragraphs used to assess oral reading on standardized tests. The professor and two of the students indicated that these passages fit the *icky* concept because they were not authentic stories (e.g, characters and plot were not developed).

As students participated in the discourse around each case, multiple forms of interaction served to enhance and extend the thinking of group members. Their discussion created multiple opportunities to construct meaningful interpretations of case information.

Rich Contexts Invite In-depth Analysis of Information and Higher-Order Thinking

Our cases were developed to encourage preservice teachers' sustained exploration of complex, authentic problems. Each case presented a coherent story about a student experiencing a reading problem. A specific problem was not defined nor was a unidimensional, specific solution provided. Multiple classroom events involving the student and several interviews with the parent, teacher, and student illustrated the complexity of factors surrounding a teacher's decision making about the pupil's reading instruction. The multiple sources of information invited our preservice teachers to analyze and synthesize case information, to examine interrelated factors, and to generate reasonable interpretations, analogies, and conclusions.

The following example, from February 25, illustrates how students used concepts studied within previous cases to analyze new information and to extend their thinking about previous decisions. In this example, the students discuss a written case study of Trevor (Waddell & Risko, 1989). Trevor's teacher integrates reading and writing strategies for his instructional program. Included in her approach are predictable books, invented spelling, and writing like an author.

R: Why did Trevor write "Hardware Store" the way that he did?

Kt: Maybe that is how he saw it on a sign.

R: Yes! Notice, also, that the lima bean V organizer was used to organize what he wrote. At the end of the year, Trevor had 209 pieces of writing, plus 6 books, and 20 newsletters. He wrote to an author and he wrote back with invented spelling. This was Eric Carle, author of *The Hungry Caterpillar.*

Kt: Emily seems like she would have been interested in this. Not sure about Lem.

R: Why do you say that? What about Lem?

Mc: It would help to bring him out of his shell, it is real, builds on his own interests.

K: If everyone else was doing (the reading/writing), he would.

Kt: I think predictable books would be good for Lem.

R: Yes, they would have structure, supporting repeated readings.

J: Lem sounds like Trevor anyway.

K: Practicing writing would gain organizational skills that Lem needs.

Once again, we noticed spontaneous use of information for thinking about problems. The students integrated information across sources to form analogous relationships that enabled them to learn about conditions in which various concepts and facts are useful (Bransford, Kinzer, Risko, Rowe, & Vye, 1989). Newly acquired knowledge was accessed to analyze information within a particular situation and to help students know when and how to use this information for examining similar problems.

Often students generated questions that required a deeper understanding of the case concepts and related readings. For example, on February 6, the students viewed and analyzed Emma's instruction. "An" observed that Emma needed help in decoding and asked "How would you do skills and decoding for Emma without taking away from the [meaning of] the story?" Over the next several days, we viewed "contrast sets," lessons in which Emma received either skill-based or literature-based instruction. Much discussion was generated about the instructional practices. Finally, on February 11,"An" noticed that the teacher in the literature-based lesson was showing Emma "more than one way to find out a word." This included "breaking down the word in parts" and providing a contextual framework for what "Kt" then described as "giving her a strategy to figure out a word." This illustration is used to show how the students' sustained thinking about complex information facilitated their ability to interpret procedures of the teacher, judge the appropriateness of instruction for Emma, and draw conclusions about its helpfulness. We believe that experiences such as these enable our students to understand problems that experts encounter and the knowledge these experts use as tools for problem solving (Risko, Cognitive and Technology Group, 1990).

Sequenced Instruction Is Replaced by Learning that Is Situated in Rich, Complex Contexts

The cases presented on videodisc are multidimensional. Several problems and examples of concepts are embedded in each case. Examining each case from multiple perspectives requires integration of information across sources. Therefore, target concepts are taught within the context of each case, and the order of their presentation is usually determined by the students and/or the questions generated during discussion. Instruction does not follow in a predetermined order. For example, instead of teaching oral reading analysis on one day, text factors on a second day, and levels of questions on a third day, all of these concepts might be discussed on the same day when analyzing a student's oral reading performance on a particular passage. This notion is illustrated by what occurred in the following example. On January 23, the group analyzed Emma's performance.

R: What did you notice about her oral reading of that passage?

A: The second story was kind of understood. The first story was factual.

R: Let's take notes—remember our earlier discussion of gist versus details for thinking about a student's comprehension.

Kt: She did omit and insert a word, and she still remembers what made sense. She still answered [the literal questions] correctly.

K: She has good vocabulary, definitely. Questions are really stupid—she pronounced hard words [in the passage].

R: Questions are requiring recall of really lower-level details.

Students then viewed Emma's performance on the last passage.

M: She has more trouble [on this passage] because she doesn't have the schema for the word *mechanic*.

This exchange served as the springboard for a more in-depth analysis of topics such as text structure, comprehension, the relationship between decoding and comprehension, and schema theory. We believe that learning to teach does not result from acquiring knowledge of facts and procedures—a knowledge that often remains unused in real classroom contexts. Rather, learning to teach should occur in rich problem-solving contexts that produces "knowledge that interacts with the particular context and classroom situation in which the knowledge is transformed into action" (Richardson, 1990, p. 12).

SUMMARY

We believe that our design for using video-based cases to present authentic classroom problems can have powerful effects on preservice teachers' learning. The process of helping students notice characteristics of problem situations and to define conditions under which to apply information is a goal commonly stated by teacher educators. Our students' involvement in case analysis provides them with multiple opportunities for enhancing and displaying their knowledge—knowledge required for exploring and identifying classroom problems, for analyzing multiple factors contributing to classroom events and student learning, for generating vocabulary to label and explain phenomena, and for drawing inferences about behaviors. Learning to use appropriate information in problem situations requires experiences in which our students explore and apply their factual and procedural knowledge. We believe that learning new information in meaningful contexts, such as provided through our cases, is more likely to help students acquire information about the use of that information and the conditions in which it is best applied. Such experiences may help preservice teachers acquire mental models of authentic classes, enabling them to think flexibly and to understand the meaning of classroom events, so that they are better prepared for actual decision making when it is needed in the classroom.

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Rethinking the College-Based Reading Clinic: Past Traditions and New Alternatives

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College reading clinics are as steeped in tradition as the practicum courses they house. For decades, many of these clinics have provided graduate training in diagnosis and treatment of reading behavior, often the culminating milestones in the preparation for reading professionals. Despite the supposed prevalence of these clinics, relatively little has been written about them (Bates, 1984). Even program descriptions are rare in the professional literature, the Temple University model being one of the few that is described in detail (Rosner & Cooper, 1982).

In addition to affording graduate students supervised experiences in preparation for their future work as reading professionals (Bean & Quatroche, 1989–90), the reading clinic also provides a community presence that helps satisfy the outreach and service mission of the broader university or college. Many children and adults with limited reading and writing skills are helped by the university clinic in their community. Furthermore, the client fees generated by most reading clinics (Bates, 1984), although usually modest, may offer some clinics independence and even protection from program retrenchment in economically lean years.

Now, however, these clinics may be ailing; part of what ails them appears to be systemic to the very traditions that have served to distinguish them in the past (Irwin & Lynch-Brown, 1988; Jones & Joshi, 1991; Sanacore, 1991. Indeed, college-based reading clinics may be the last stronghold to give way to the reform that already has teacher education rethinking its programs, particularly in fiscally lean times (Gursky, 1992).

The purpose of this paper is to discuss more fully the problems facing the traditional clinic and to describe one alternative model that addresses those problems. Finally, directions for the future will be briefly discussed.

PROBLEMS FOR TRADITIONAL CLINICS

In most institutions, the maintenance of existing clinic facilities is disproportionately expensive given the space and support staff they require and the limited number of students and clients served at any given time. For these reasons and more, reading clinics receive wavering internal support from academic administrators and faculty in other departments and schools. Certainly, the development of on-campus reading clinics and the costs they bear are prohibitive more often than not, and few if any new on-site clinics have emerged in recent years (Hanes, 1989).

When budget constraints are most severe, the reading clinic may find itself (i.e., its operations and, unfortunately, the faculty associated with it) at odds with the academic program, nonclinical faculty, and college administrators. Yet what ails traditional reading clinics today has been in the making for decades. Several major factors appear to contribute to the problems with traditional university reading clinics. These include

- Inadequate funding and resources for clinical programs and practica courses (Bader & Wiesendanger, 1986).
- The lack of advocates for the reading clinic.
- The isolation of the reading clinic from the mainstream of the academic program even within a school of education (Bader & Wiesendanger, 1986).
- The diagnostic-prescriptive model often advocated by reading clinics (Bean & Quatroche, 1989–90; Cooter & Flynt, 1987; Sanacore, 1991).

Inadequate Resources and Funding

Clinical operations are expensive and usually not cost effective. They require space, materials, and of late, high-tech resources along with annual investments of human resources that include graduate assistants and clerical support staff.

Reading clinics are typically associated with one or two courses, typically graduate practica, that carry limited enrollments. Clinical courses have enjoyed smaller class sizes because of their intensity and in-depth case study approach. From a pedagogical perspective, this makes good sense. Nevertheless, such courses generate few student credit hours.

Another problem is that fees for client services have been kept relatively modest and provisions for "no-charge" services are often made for those who cannot pay. Consequently, becoming self-sufficient is very difficult for campus-based clinical operations as they currently exist.

Lack of Advocacy

The reading clinic has few advocates. Faculty who teach these courses are seen by their colleagues as possessing specialized knowledge that separates them from their peers in ways that have "rougher" edges than distinctions more easily tolerated (i.e., elementary versus secondary, developmental versus content specialties). Nonclinical faculty may believe that their clinical peers receive preferential treatment in terms of smaller classes, released time or adjustments in teaching loads, access to graduate assistants, and budget (even modest materials budget). These tensions are mostly dormant when all is well, but they are quick to emerge when economic constraints separate the "have nots" from those perceived to "have."

Isolation

The reading clinic is often isolated from the mainstream academic program and the school of education. The traditional reading clinic has never fit well within its most common academic home, departments of teacher education. The traditional "one-on-one" laboratory setting versus the "real-world" setting of the classroom adds to the tension. The question that inevitably arises is "Who, after all, are we preparing? Specialists and clinicians or generalists and 'regular' classroom teachers?" Indeed, one study (Bean & Quatroche, 1989–90) found that only 14% of the graduates of a clinical program were employed as reading specialists. Most of the graduates were classroom teachers.

The isolation of the reading clinic was further confirmed by Bader and Wiesendanger (1986), who found that 94% of the clinics they surveyed did not interact with outside departments. Although a few clinics involved outside departments for referrals, rarely were outside departments involved in assessment or instruction.

The Diagnostic-Prescriptive Approach

Another problem faced by reading clinics is that they are often based on a diagnostic-prescriptive pedagogical approach (Bean & Quatroche, 1989–90; Cooter & Flynt, 1987) that can be antithetical to current holistic methods. In traditional clinical programs, hours are often spent on diagnosis to try to ferret out specific subskill weaknesses. Efforts are then directed at remediating these so-called inadequacies so that the client will presumably recover. Recent approaches, however, tend to focus on providing children with a language rich environment filled with various reading, writing, listening, and speaking activities that develop literacy. Some recent approaches also suggest "kid watching" as a major assessment technique (Sanacore, 1991. In some places, even the term *reading specialist* has been replaced with *literacy specialist* or *language arts specialist.*

AN ALTERNATIVE MODEL

Against a backdrop of fiscal instability in most states and changes in traditional pedagogical approaches, reading clinics have no choice but to respond with alternative ways of doing business. And the most successful alternatives will be those that correct the problems of the traditional clinic. One of these alternatives is the Basic Educational Skills Training (BEST) Program, which has operated at Millersville University in Pennsylvania since 1980. Over the years, the program has faced many problems and has emerged as a viable alternative to the more traditional clinic.

Basic Description

The BEST Program has many of the features of a traditional clinic. It provides children, youth, and adults who are experiencing some difficulties in reading and writing with two hours weekly of individual literacy instruction. Those planning all, and implementing most, of the instruction are graduate students completing a six-hour practicum required for reading specialist certification in Pennsylvania and also required for their master's degree in reading–language arts.

The program does, however, have some distinct differences from most university clinics. Unlike most programs, the BEST Program does not operate in the summer (Bader & Wiesendanger, 1986) or even in the late afternoon on weekdays. It operates on Saturdays. This is important for two reasons. Instructional space is plentiful, and the courses connected with the clinic are unlikely to conflict with any other university offerings. But how does the BEST Program deal with some of the problems faced by more traditional clinics?

Cost-Effectiveness and Resource Utilization

The BEST Program charges clients $200 for a semester of instruction. Typically, about 50 clients (ages six to adult) are enrolled in the program. About 25% receive some tuition waiver based on financial need. Fees are used to pay for materials, advertising, snacks for the children, and salaries for nonuniversity personnel to help coordinate the program. Thus, all expenses, other than faculty salaries, are paid for by clients' tuition.

Instruction is planned by the graduate student taking the practicum course Diagnosis and Correction of Reading and Writing Difficulties. Working with the graduate students are undergraduate students in elementary and special education who are taking the course Prevention and Correction of Reading Problems. Serving as instructional aides in the program, these undergraduates implement some of the learning activities planned by the graduate students. Helping in the supervision of the graduate and undergraduate students are postmaster's candidates taking the course Applied Supervision: Reading Clinic, thus completing their practicum requirements for their Pennsylvania reading supervisor certification. Thus, the BEST Program provides practicum experiences for undergraduates, master's students, and postmaster's students. Three courses are directly involved in one practicum.

The Saturday clinic time also ensures maximum use of available resources. Because few classes are held on Saturday, a whole building is available complete with computer labs and plenty of classroom space. Once a former lab school, the building even has playground equipment.

Integration and Advocacy

The BEST Program is more likely to be in the mainstream of the school of education because both undergraduate and graduate students receive training. Because many universities perceive undergraduate education as their primary mission, the inclusion of undergraduate students is of particular importance.

Furthermore, a number of departments are also involved at the clinic. Undergraduate elementary education majors take the clinic course as an elective, although it is required for undergraduate special education students. Graduate special education students may also take the graduate clinic course as an elective. In addition, students in the school psychology program often use BEST students to fulfill some of their practicum requirements. Students in the administration program working for reading supervisor certification serve as supervisors in the BEST Program.

Obviously, with a variety of departments involved in the clinic, numerous faculty also participate. This broad-based involvement tends to foster an equally broad advocacy group. Not only the community and the reading staff but also many other departments and faculty have direct knowledge of the clinic's value.

Holistic Pedagogical Approach

Unlike traditional clinics, relatively little time is spent on initial diagnosis in the BEST Program. A standardized test, an informal reading inventory, and an informal writing inventory are given. Interviews are conducted with the children's teachers and parents as well as with the children themselves. Ongoing assessment, however, is particularly stressed.

After the initial assessment, a plan is developed and shared with the children and their parents. The plan contains general objectives for the semester's work with the child, such as "the child will enjoy reading a book of his choosing." Particularly emphasized in the BEST Program are the child's strengths, and efforts are made to strengthen the child's self-concept with regard to reading–language arts. In fact, at the end of the program, each child receives an award for being "the best" at something related to literacy acquisition (e.g., "the BEST at writing stories about turtles," "the BEST at reading stories about bears").

THE FUTURE

Given all the problems and the decrease in university-based reading clinics in the last decade (Jones & Joshi, 1991), one might legitimately ask: "Can the university-based reading clinic survive?" It can, but some changes will have to be made in the traditional format. Alternative models should be sought; from these, new traditions will evolve.

Obviously, the BEST Program is not the only alternative clinical program. Other options that should be considered include school-based clinics, joint efforts with professionals dealing with other special needs learners, Chapter One–funded clinics, and cooperative efforts with latchkey programs. However the university-based clinic evolves, reading professionals should work toward its maintenance. The clinic is a tradition that must change, but its value to the reading professional and the community at large make it a tradition that must also be preserved.

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Researching One's Own Teaching in a Reading Education Course

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Teacher education classes often follow a conventional, lecture-based format in which preservice teachers are told what experts know (concepts) and then examined on how well they remember these concepts. Sometimes preservice teachers are given examples of how experts have solved classroom dilemmas (procedures), but seldom are they asked to solve these dilemmas themselves (Risko, Yount, & Towell, 1991). Such formats tend to inhibit teachers' inquiry into solving complex instructional situations while teaching. These preservice teachers are prone to have "textbook" explanations of concepts and limited understanding of the integrated use of these concepts when faced with complex instructional situations. Risko et al. (1991) report that their preservice students "seemed (1) inflexible when thinking about multiple problems that students may encounter, (2) limited in their application of intervention strategies to novel instructional contexts, and (3) limited in their use of alternate strategies for times when instruction didn't go as expected" (p. 89).

Needless to say, these are compelling reasons to reform teacher education courses; however, research in reading education courses is sparse (Alvermann, 1991). Existing research rarely focuses on the content and delivery of instruction within teacher education courses (Andrews, 1989). Responding to this call for reform, college faculty, in an attempt to develop problem-solving attitudes in the public schools, have been helping teachers become classroom-based action researchers. However, few college professors have become researchers in their own classrooms.

The teacher/researcher framework involves teachers looking at their own teaching as participant/observers. This type of research provides methods and concepts for studying natural behaviors in authentic settings. It suggests a research agenda that is ecologically valid by arguing that it is beneficial for experimenters to "leave the security of laboratories, tolerate greater ambiguity, and go where people actually live in order to analyze...behavior into components that perhaps then become the basis for development of dependent measures and theories for further experimental study" (Brooks & Baumeister, 1977, p. 415).

In this study, two college professors collaborated in a reading diagnosis course to answer questions about college teaching. Two guiding questions were postulated: (a) What class structure leads students to integrate concepts and (b) what type of activities enable students to integrate concepts? This study, then, focused on how a teacher education course in reading diagnosis was structured to promote an active, constructive stance to teaching.

METHOD

Participants/Setting

The participants included 20 preservice students, a participant/observer (a faculty member in special education), and the college instructor as a teacher/researcher in a 14-week course on remedial reading. Class members were either elementary majors whose previous reading classes focused on whole language instruction or special education majors whose previous work focused on behavior management and direct instruction.

The course comprised two main components—a seminar and a tutorial experience. Seminar time was evenly distributed between lecture and group activities with four exams throughout the quarter. The exams included (a) a short essay in which students had to justify how instructional techniques were alike and different; (b) an open book, group exam in which students had to justify instructional plans for three case studies; (c) a one-question essay exam on reading development, integrating theory, and practice; and (d) an open-ended question asking students to describe the most important guiding principal they had learned.

The tutorial sessions occurred twice a week for 90 minutes following the 90-minute seminar. The preservice students worked one-on-one with children developing their own plans based on the children's strengths and needs. A basic format was provided for writing diagnostic narratives in which students planned lessons, justified plans, made observations, and reflected on their plans. Both verbal and written feedback from the instructor was provided throughout the course.

Data Collection and Analysis

Data were gathered through a variety of methods (teaching journal, field notes, videotapes, audiotapes, semistructured interviews of selected students, the final exam, and students' diagnostic narratives), so as to increase the likelihood of credible findings (Lincoln & Guba, 1985).

Field notes were taken during every class session and students were interviewed twice, at the midpoint and at the end of the course, by the participant/observer. The four selected students represented the different majors and were asked to identify class activities that helped them integrate concepts. They were also asked which two class activities were most and least helpful. In the second interview, students were asked to describe what they believed should be more or less stressed in the class. The participant/observer probed students about their responses based on field notes.

The final exam, in which students were asked to discuss the most salient guiding principle learned in the course, was analyzed in relation to students' diagnostic narratives and the field notes.

The class videotapes were chronologed, noting the flow from activity to activity, as well as the amount of time spent on each activity. This was compared against the instructor's teaching journal and the field notes to provide consistency of observations.

The students' diagnostic narratives were used to cross-check observations recorded in field notes, instructor's journal, and interviews.

All field notes made by the researchers, journal entries, interview transcripts, and students' final exams were considered in relation to each other. Data were read and reread by the researchers in light of the two research questions and using analytic induction (Goetz & LeCompte, 1984) in order to identify trends. The results were analyzed to answer the two guiding questions.

RESULTS

Question 1: What class structures lead preservice students to integrate concepts?

One pattern that emerged was the use of multiple perspectives to meet individual children's needs. From the transcripts of the lecture, the course outline, and textbook, it was evident that multiple perspectives to instruction were encouraged as a way to meet the needs of individual children in the classroom. The instructor presented various perspectives on a continuum ranging from whole language to direct instruction. Students were encouraged to consider why a technique worked or failed with a particular child. In the student interviews, the participants mentioned this as an important characteristic in their planning and implementing of lessons. They reported planning lessons using various techniques that promoted students' strengths. One student commented, "A teacher can implement the best strategy to teach an individual to read. Not all students can work from a top-down approach, nor can all students work from a bottom-up approach. This approach selects elements from both approaches and individualizes the technique to the student." In both interviews and the final exam, students used a variety of approaches to solve instructional problems. Use of a combination of teaching strategies was also evident in the diagnostic narratives, which explained the adjustments students made from various perspectives to meet individual needs.

A second structural pattern indicated that the students believed they needed more direction and structure. For example, students indicated that they liked the structure of the textbook. One student said it "was real direct and practical, it dissects everything and describes techniques step by step." Although the course was not presented as such, many students believed that there was only one correct procedure or theory for each situation. One student exemplified this attitude in her interview, "The class was frustrating because I was worried about my grade and having all my I's dotted and the theories said just right."

Because the course promoted employing multiple perspectives, deciding which instructional approach to use with a particular child, and allowed students to develop their own lesson plans, the preservice students believed that they had no structure. However, teaching is a dynamic process and there is no one exact procedure. As one student said, "When you have a real live child, it doesn't happen that way—it's not a neat package. My kid didn't fit a pattern."

Allowing for individual planning based on student need made the students feel uncomfortable and ask for more structure. When the expectation was to be flexible and responsive, and then justify the action, students believed that they needed more structure.

Question 2: What type of activities lead preservice students to integrate concepts?

Two patterns that related to this question emerged. From the chronolog, the student interviews, the researcher's observations, and the professor's journal, a pattern of active student involvement emerged. The chronolog showed that 40% of instructional time was spent on examples and practice exercises in which the students had to apply information from the lecture, textbook, and teaching. Fourteen percent of the time was spent in a question-and-answer period in which students discussed problems in their teaching. Students lead the seminar for 54% of the seminar; the teacher lead the seminar for the remaining time (housekeeping, 16% and lecture, 30%). During the seminar, which, in the past, had often been a lecture, more cooperative learning activities were used. Commenting on the group experiences, one student remarked, "One person's ideas leads to new ideas. I can make connections between my thoughts and what to do." This focus on student learning seemed to promote integrating concepts rather than a theoretical analysis of a specific reading technique.

From the interviews, students commented that the question-and-answer period was the most beneficial activity. One student commented, "The question and answer period relates what's happening in class to what's happening with my child. It relates real problems with real answers." It appears that the activities of the class helped these students view their work as central to their understanding of teaching and learning (Duffy, 1990). They began to construct their own theory of reading within the framework provided in the seminar.

The second activity pattern that emerged was the modeling of instructional techniques to help students integrate concepts. During the seminar, the professor modeled how to implement specific instructional techniques. The professor made this statement about her purpose for modeling in her journal: "I was also concerned with the timing of modeling the techniques and which ones are critical for teaching and which ones are not. Which ones illustrated concepts and which ones were less illustrative of concepts." The modeling of techniques was a way to illustrate major theoretical concepts. Students also suggested that the demonstrations helped them understand and apply concepts. One student commented, "Demonstrations are good. They are concrete and visual, but, without the theory to back it up, they are not useful." The professor used concrete experiences of participating in reading lessons to help students formulate conceptual knowledge. During the demonstration exercises, students could construct a personal understanding of how they would react during a particular type of instruction. Their personal responses helped them understand more abstract constructs related to remedial reading.

The activities involved the students in developing and using their knowledge about reading instruction. The preservice students needed to experience the concepts personally before they were able to comprehend them fully. When students could brainstorm and interact in a group, they developed multiple solutions to problems. Although they did use textbook knowledge, it was when they had a question about their teaching. Their practice focused their textbook reading. In both the midterm and final interviews, students reported relying heavily on the textbook to formulate their instructional decisions when problems in teaching arose. Thus, instruction that is grounded in personal experience, even at the college level, helps students conceptualize textbook information and begin to think independently.

DISCUSSION

Teaching is a complex interaction in which concepts interact and change as they are applied within a situational context. When the students in this study were actively engaged in constructing knowledge, we observed that their personal understanding was never quite the same as the structured, theoretical presentation in the textbook, research, or lecture. As Anders (1991) has postulated, "Teachers appear to see their practice embedded in several theories at once; therefore, it may be that one theory regarding the reading process and related practices is not sufficient for explaining classroom practices" (p. 216).

Pulling Patterns Together

As we considered the first guiding question, we realized that the preservice students had the misconception that more structure was what they needed to handle problematic teaching situations. However, to give them a prescribed way to teach, as in a basal reading manual, would be to interpret the pattern of "need for structure" separate from the pattern of "multiple perspectives." Students considered multiple perspectives to meet individual student needs, but they believed that there must be an exact description of their particular child in the textbook.

In considering the second guiding question, we realized that students reported using the professor's model and practice exercises as a means to concretely discuss their theories and practices. After the demonstrations, the students would practice techniques with their own students and then return to class with questions related to solving problematic situations.

As we considered the power of modeling and student discussion in light of the course structure, we realized that the professor did not demonstrate the contradiction of thoroughly preplanning a lesson and subsequently changing those plans in midstream to solve an unanticipated dilemma for which there was no exact textbook answer. Modeling the complexity of decision making and letting students discuss it may have helped students accept the sometimes contradictory nature of practice. Perhaps teacher educators need not only to demonstrate how to teach reading but also to model their own flexibility in solving dilemmas by drawing from multiple perspectives. In other words, we need to show students that "teaching by its very nature involves irresolvable contradictions between being organized, well-planned and directive on the one hand and being flexible, responsive and covert on the other" (Duffy, 1990, p. ix).

Provocative Questions

One of the purposes of a naturalistic study is to raise issues that could lead to further research and serve as a method for analyzing and reorganizing teacher education classes. In looking at the patterns that emerged in this study, several provocative questions arise. First, how can we facilitate the use of a multiple perspectives model within the teacher education program? Perhaps by using multiple perspectives ourselves in college classes, we can show students how to use various perspectives within an instructional event. Second, in addressing the issue of structure in the class, how can we model the unstructured contradictory process of considering various perspectives and have students then practice this model? Decision making during teaching is a difficult concept to present in a traditional lecture format. Currently, the case study method, videodisc cases, and hypercard technology are ways to provide opportunities for preservice students to engage in the contradictory process of pulling from various perspectives. However, this leads to a further concern: How can pulling from various perspectives be measured? Perhaps we need to experiment with a variety of assessments including traditional measures, portfolios, self-reflection, and self-assessment in college courses to fit the perspective we are proposing.

Finally, in dealing with a population of students in teacher education that is traditionally female, is there a way of approaching the dynamic and unstructured way of selecting techniques that fits women's special way of knowing and learning? Women, more than men, are caught in a posture of received knowing, a view in which women imagine themselves as capable of receiving, even reproducing knowledge from experts, but not qualified to create knowledge on their own (Belenky, Clinchy, Goldberger, & Tarule, 1986). It appears that the activities that encouraged personal, subjective knowing were beneficial to the students in this study. Perhaps experiences that ask students to discuss their personal learning and development can lead them to a more integrated stance in which preservice students are comfortable creating their own knowledge.

In summary, taking a closer look at one's teaching has led both to restructuring courses and providing questions for further research and study. This research process has intensified the professor's reflective thinking about college students' learning and the use of multiple perspectives, even in college classes. In fact, the process of researching one's own teaching highlights the reflective process that we, college professors, want teachers themselves to use.

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Improving Teacher Questioning: A Study of a Training Program

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During their education, preservice teachers have responded to many teacher questions but have not necessarily considered how to evaluate them. Why should they? In all probability, as students, the important aspect of a question was the right answer. Why would students consider the type of question, its relevance, and whether it involved higher thinking?

In revising their elementary reading methods course, the authors decided to develop a training program in questioning and to evaluate its effectiveness in encouraging the use of higher-level questions by teachers. Since questioning was only one component of the unit on comprehension, the training program needed to be both effective and efficient—one that could be completed in minimal time.

The authors developed a four-class-hour training program that included three elements: (a) shared inquiry, based on the Great Books approach to questioning and discussion (*An Introduction to Shared Inquiry*, 1987), (b) the Question-Answer-Relationship Strategy (Raphael, 1982; Raphael & Pearson, 1985), and (c) question types found in basal readers: literal, inferential, critical, and creative (May, 1990).

Shared inquiry was chosen for two reasons. First, the question used to begin a discussion should be one that has multiple answers or multiple reasons for the answer, which can be supported by the text. In a discussion, the possibility of multiple answers or reasons encourages more thoughtful analyses of the text.

Second, the proper role of the person who initiates a discussion is facilitator, rather than questioner and evaluator of answers. Facilitation is accomplished through various techniques such as those described by Dillon (1988a; 1988b). These include reflective restatements such as repeating, summarizing, or characterizing the previous remark; using silence or wait time to allow the speaker to expand or another group member to comment; asking others what they think about what's been said; stating the relationship between what was just said and that of an earlier speaker; and asking the speaker or a group member to elaborate on or clarify a point. In this way, a sharing of ideas while interacting with text is more likely to occur.

The training included a shared inquiry discussion so that students could experience such a discussion, distinguish it from a question-answer discussion, and develop an awareness of the potential of shared inquiry discussions to increase comprehension. Since most participants respond with interest through the sharing of ideas, they extend their own understanding of the text.

Raphael's Question-Answering-Relationship (Q-A-R) strategy (Raphael, 1982; Raphael & Pearson, 1985) was the second part of the program. It is based on Pearson and Johnson's (1978) question classification system—text explicit (right there), text implicit (think and search), and schema based (on your own) questions. The benefits of this strategy are its simplicity (only three types), its success as reported by Raphael, and its labels that provide direction on finding the answer.

Because basals are used in the majority of classrooms, the program included the four question types often provided in basal reading guides: literal, inferential, critical, and creative. Besides building a foundation to help teachers evaluate questions in teachers' guides or develop questions for literature-based programs, a further benefit of this system is that it helps develop an awareness of the distinctions between the types of questions, thus strengthening the possibility of their use.

The researchers designed this pilot study to investigate whether a short training program of 200 minutes could increase the use of questions involving higher-level thinking.

METHOD

Subjects

Twenty-two of 35 students enrolled in an elementary reading methods course in a state university in the northwest United States who completed both the pre- and posttests were subjects in the study. Nineteen students were white females, one was an Hispanic female, and two were white males. Eight college juniors and 14 seniors participated in the study.

Materials and Procedures

The pre- and posttests consisted of students reading the story *Jack and the Beanstalk* and then following these directions:

> The principal of your building has informed the staff it is time for her or him to make classroom observations. Each teacher is to arrange a time for observation. You extend an invitation to observe a reading lesson. Your plan is to have the class read *Jack and the Beanstalk* followed by a class discussion. In the space below write five questions, based on the story, that you would plan to use for the discussion.

The authors used the students' pretest questions to develop random lists of five questions each, which students used during the training program.

In the first class session (all class sessions were 100 minutes in length) students completed the pretest without time limits. The instructor informed students that their performance would not affect their course grade but would be used for self-evaluation.

The instructor presented the question training program during the next two consecutive class sessions, at all times stressing the value of questions involving higher thinking. The second class session included two sections, each approximately 50 minutes in length: (a) shared inquiry and (b) the basal reader question types. First, the students read *The Rich Man and the Shoemaker* and then participated in a 15-minute shared inquiry discussion. To encourage participation, three groups were formed, each facilitated by the instructor or a graduate student familiar with shared inquiry procedures. The initiating question for each group was an opinion question such as, "Do you think the Shoemaker was intelligent? Why?" During the discussion, facilitators used follow-up comments and questions, utilizing Dillon's (1988a; 1988b) techniques. The students then reflected on the shared inquiry experience, the requirements for shared inquiry-leading questions, and the role and responses of the discussion leader.

Next the instructor's lecture provided definitions and examples of the four types of comprehension questions often used in basal readers. The instructor then distributed the previously prepared lists of five questions to small groups of students who identified the types of questions on their lists. Since two copies of each list were distributed, class discussion focused on comparing and explaining results.

The third session, also divided into two 50-minute sections, focused on Raphael's Question-Answer-Relationship (Q-A-R) strategy and developing initiating questions for shared inquiry. The instructor provided information, definitions, and examples of the Q-A-R strategy through lecture and randomly distributed the same lists of questions used during session 2. Groups of students classified their lists of questions according to the Q-A-R system. As before, class discussion and comparison of results followed.

Then students listened to information about the Great Books style of beginning questions, which stressed inference, opinion, and having more than one answer that can be supported by the text. Following this, small groups developed similar interpretive/opinion questions based on the story *Stone Soup*. Sharing and discussing questions ended the training program. At the end of this period, students were provided the posttest materials and asked to turn in their five questions at the next class period.

Scoring

One of the authors identified a category for each pretest question. Then the same author identified the question category for each posttest question.

The authors developed three "thinking-about-text" question categories, with the second and third categories incorporating higher thinking questions. The categories were the following:

1. Restricted thinking about text (text explicit).
2. Related thinking about text (schema based) using text information as a take-off point, thus moving beyond it.
3. Extended thinking about text (text implicit), requiring an analysis of text information.

See Table 1 for results and the appendix for examples of each question category.

A few students did not complete five questions, but others embedded several questions within one. In such cases, each embedded question was analyzed as a separate question. Thus, the total number of questions varies, and the total number of questions for both pre- and posttests was more than the 110 expected.

RESULTS

The total number and percentage of the restricted thinking about text questions decreased dramatically from 65 (35.33%) to 11 (7.97%). The reduc-

TABLE 1
Number and Percentage by Question Type of Pre- and Posttests by Question Categories

Questions Categories	Pre-test		Post-test	
Question Type	N	%	N	%
Restricted thinking about text				
Vocabulary	5	2.72	5	3.62
Literal	60	32.61	6	4.35
Total	65	35.33	11	7.97
Related thinking about text				
Prior knowledge				
Inferential	7	3.80	14	10.14
Creative	37	20.11	36	26.0
Total	44	23.91	50	36.23
Extended thinking about text				
Text inferential	3	1.63	2	1.45
Inferential (both)	28	15.22	25	18.12
Critical	25	13.59	35	25.36
Literary/Story grammar	19	10.33	15	10.87
Total	75	40.77	77	55.80

tion of literal questions from 60 (32.61%) to 6 (4.35%) accounted for this decrease. Related thinking about text questions increased more than 12%, from 23.91% to 36.23% with both question subtypes increasing. The relative increase in the extended thinking about text questions from 40.77% to 55.80% was due mainly to the increase in critical questions (from 13.59% to 25.36%). Thus, the total relative increase in the higher-thinking questions, related and extended thinking about text, was 27.35%.

DISCUSSION

This study confirms the results of the Wedman and Moutray (1991) study that short training programs can influence preservice teachers' questioning practices. However, Wedman and Moutray dealt only with text and prior knowledge inference questions; the present study included a more comprehensive treatment of question types.

Even without a statistical test, the authors believe the training program's emphasis on higher-thinking questions was successful and the results substantial. First, lower-level questions decreased more than 27%. Because a total elimination of restricted thinking questions was not the goal, the drop from 35% to 8% is a commendable result. Second, the use of critical questions increased by more than 12%. The training program may have helped students develop a better understanding and appreciation of this question type.

Limitations of the study include the small number of subjects (22), the use of an intact class, and having only one rater score the questions. This study was exploratory in nature, designed to investigate whether the training program warranted continued use and research. The increase in higher-thinking questions (27.35%) justifies further investigation of the training program with refinements and greater rigor in the research design.

It was not until the authors began reflecting on the implications of the study that they realized an improvement in the training program probably would result from retaining the emphasis on higher-thinking questions while incorporating the names of the question categories. Because the names of the categories themselves direct attention to the thinking relationship, their inclusion would encourage students to consider the type of thinking required of the various question types.

Although these results support continued implementation and evaluation of the training program model, two major questions remain unanswered. First, since the posttest immediately followed training, are the effects long lasting? Second, even if the effects are long lasting, will they be transferred into actual classroom practice?

A second study is planned that will (a) use questions for classification practice in the training program from another story rather than the pre- and posttest story, (b) identify the question type by the type of thinking required, (c) include a delayed posttest, and (d) utilize a second rater for reliability of scoring. If the results from this study are encouraging, then studies investigating the transfer of learned questioning behavior into classroom practice may be initiated.

APPENDIX. EXAMPLES OF QUESTIONS BY CATEGORY

Restricted Thinking about Text

Vocabulary	What do you think *pelters* means in the last paragraph on p. 70?
Literal	What three things did Jack steal from the ogre?

Related Thinking about Text

Prior Knowledge	(Information in text lacking, so must rely on background information to answer question)
Inferential	Why do you think the ogre's wife tolerated the demanding and cruel actions of her husband?
Creative	Would it bother you if someone you cared about were doing something very wrong?

Extended Thinking about Text

Text Inferential	(Reference to the text is required in answering the question) What does the story tell us about the character of the ogre's wife?
Inferential	(Answer could be based on information in the text, on prior knowledge, or both) What would the giant have done if he had caught Jack?
Critical	Did Jack do the right thing in trading the cow for the magic beans? Why?
Literary/Story	Could the dialogue in the story tell you anything about its setting?
Grammar	

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The Belief Systems and Instructional Choices of Preservice Teachers

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Teachers' beliefs or theoretical orientations toward reading influence their decisions and judgments about how reading is taught (Harste & Burke, 1977; Hollingsworth, 1989; Roehler, Duffy, Hermann, Conley, & Johnson, 1988; Rupley & Logan, 1984). When faced with contextual constraints such as basal readers and curriculum mandates, beginning and expert teachers have been observed adapting lessons to reflect their own theories of reading (Blanton & Moorman, 1987; Lalick, Borko, Pecic, Perry, & Livingston, 1985).

Preservice teachers' implicit belief systems about reading instruction should be a primary concern for teacher educators. Through an understanding of the neophytes' "developing belief systems and instructional practices, an improved knowledge base can be derived from which to draw implications for teacher education" (Alvermann, 1990, p. 692). Gray (1984) indicated that preservice teachers are strongly influenced by traditional views of the reading process and reasoned that preservice teachers may rely on recollections of their own reading instruction, which was likely traditional in nature. This is disturbing in light of recent research that reveals that reading and writing are developmental processes, enhanced by holistic rather than isolated skills methodologies (Goodman, 1989; McCaslin, 1989; Shanklin & Rhodes, 1989).

Stansell, Moss, and Robeck (1982) reported that preservice reading courses influence teachers' reading beliefs. Few studies, however, have attempted to determine whether belief systems are reflected in their instructional choices.

The present study investigates the belief systems and instructional choices of preservice teachers. Specifically, this study addresses the following research questions: (a) What are preservice teachers' implicitly held belief systems prior to participation in a reading methods course? (b) Do preservice teachers' belief systems evolve as a result of course participation? and (c) Do preservice teachers make instructional choices that are congruent with their belief systems upon course completion?

METHOD

Subjects

The subjects included 37 elementary and special education majors enrolled in two sections of an introductory reading methods course. The students were enrolled in a large midwestern university and were of junior and senior status. None had previous coursework in reading.

Course Content

The course was designed to allow exploration of three basic models of reading: bottom-up (Gough, 1985), top-down (Goodman, 1985), and interactive (Rumelhart, 1985). Bottom-up models assume that meaning resides on the printed page and that the readers' task is to translate written symbols. Top-down models suggest that reading begins in the mind of the reader. The reader uses background knowledge and textual cues to make hypotheses about print. Interactive models suggest that the reader relies differentially on decoding strategies and background knowledge while reading. Different reading models, of course, suggest different instructional practices. Top-down theorists approach the teaching of reading holistically, with the language arts processes of reading, writing, listening, and speaking integrated to enhance reading development. Bottom-up theorists approach the teaching of reading as a set of specific subskills that are hierarchically organized for instruction. Interactivists provide instruction with a dual focus on decoding and meaning, which would vary based on student need.

The reading methods course was designed to familiarize participants with the three reading models as well as their instructional implications. Course topics ranged from initial reading instruction to study skills, with emphasis on how proponents of bottom-up, top-down, or interactive models might make instructional choices congruent with their belief systems. The instructor attempted not to present a notion of which model and instructional choices were best. Rather, she urged teachers to teach in a manner congruent with their implicitly held belief systems. However, it should be noted that the instructor supported an interactive model of the reading process.

Procedures

To assess preservice teachers' belief systems, three simple and informal questions were devised:

1. What is reading?
2. How do you believe young children learn to read?
3. How would you teach a young child to read?

Questions were formulated based on the belief that teachers' philosophies reflect their perceptions of the reading process and their conception about reading development (Leu & Kinzer, 1987).

Subjects wrote responses to the questions twice, on the first day of class prior to any discussion about the course and again during the last class period. Time limitations were not imposed.

Responses were read and reread and then classified by philosophy. Statements were independently categorized by the researcher and a trained assistant, who achieved 91% agreement on the classification of a random selection of 20 student responses for each question. Bottom-up responses emphasized reading as a skills enterprise, highlighted the use of phonics, and described the reader's task as receiving information. For example, one student described reading as "the ability to sound out words." Top-down responses reflected reading as comprehension and the reader as active: "Using what you already know about something to understand what the author is trying to relay." Interactive responses placed dual emphasis on the written code and comprehension: "Reading is being able to pronounce the words and realizing that they bring forth ideas and concepts."

Frequencies of responses by belief systems were tabulated and reported in raw scores and percentages. To consider the consistency of preservice teachers' belief systems, responses across questions were determined to be congruent or noncongruent. A chi-square analysis was performed to discover the significance of the relationship across subjects' question responses.

In the 18th week of a 20-week class, each student devised a lesson plan that was reflective of his or her beliefs about reading. This lesson was written to teach word recognition in a primary grade classroom (grades 1–3). Subjects were observed teaching the lessons at a campus lab school; lesson plans were also collected. Lessons were then judged to be congruent or noncongruent with subjects' stated philosophies on the postquestionnaire. To be deemed congruent, beliefs had to be reflected in the written plan and the classroom execution.

Lessons categorized as top-down engaged children actively in reading. Readers' backgrounds were activated, skills were introduced in context, and integrative language arts activities were provided. For example, one lesson consisted of a shared reading of the big book, *The Cooking Pot* (Cowley, 1987). Prereading discussion focused on the concepts of title, author, and illustrator. Background knowledge about magic was activated, and students predicted story content. Students were encouraged to join in on subsequent rereadings of the predictable text. A tagboard window was used to highlight three sight words whose configurations were briefly discussed. Students acted out the story as a creative extension activity.

Bottom-up lessons had a skills emphasis. Skills were introduced at the onset of the lessons without the benefit of story context. Lesson goals focused on skill application rather than comprehension. For example, one bottom-up lesson consisted of teaching the "VCCV" syllabication generalization. The teacher introduced the generalization as a secret code that would help readers determine unfamiliar words. The teacher then modeled the application of the "VCCV" code, and students read words and sentences that contained the "VCCV" generalization. A short passage was then read orally for the purpose of applying the generalization in context. Postreading questions targeted word pronunciations (e.g., "Can you find a sentence on page 32 that contains the VCCV code and read it aloud?").

Interactive lessons had a dual focus on comprehension and skills instruction. Although skills were emphasized more than in top-down lessons, they were not the lessons' main foci. For example, one lesson began with the presentation of five known sight words in sentences, each of which contained a "silent *e*." This portion of the lesson was inductively based and resulted in the student's formulation of the generalization. Unfamiliar words that followed the silent *e* pattern were then introduced in the context of sentences, which the student read using context and phonics knowledge. Next, the student read a story that contained silent *e* words. However, story discussion focused on comprehension, using the Directed Reading-Thinking Activity format. Skills knowledge was evaluated via oral rereadings of portions of the text in response to comprehension questions (e.g., to verify a prediction).

Lesson plans were independently categorized by a researcher and a trained assistant. Initially, 89% agreement was achieved. Disagreements were settled through discussion. Percentages of students whose lesson plans were congruent and noncongruent with their stated philosophies were calculated.

RESULTS AND DISCUSSION

Preliminary analysis dealt with the first research question, "What are preservice teachers' theoretical beliefs about reading prior to participation in a reading methods course?" Descriptive data on the frequency of responses on belief statements are presented in Table 1. (Responses in the "miscellaneous" category were more aesthetic than theoretical in nature, such as "Reading is life.") Results indicated that prior to course participation, the majority of students defined reading as an interactive process; however, responses about how young children learn to read reflected a bottom-up orientation.

The second analysis dealt with the research question, "Do preservice teachers' belief systems evolve as a result of course participation?" In examining Table 1, an evolution of preservice teachers' responses between pre- and postcourse questionnaire administrations is apparent. Interactive definitions of the reading process remain constant, but top-down definitions almost doubled, and bottom-up definitions are nonexistent. However, in

TABLE 1
Frequency of Responses on Belief Statements

	Top-Down		Bottom-Up		Interactive		Miscellaneous	
	#	%	#	%	#	%	#	%
Question 1: What is reading? (n = 37)								
Pre	9	24.3	4	10.8	19	51.4	5	13.5
Post	17	45.9	0	0	20	54.1	0	0
Question 2: How do you believe young children learn to read? (n = 37)								
Pre	11	29.8	18	48.6	8	21.6	0	0
Post	21	56.8	2	5.4	14	37.8	0	0
Question 3: How would you teach a young child to read? (n = 37)								
Pre	9	24.3	23	62.1	2	5.4	3	8.1
Post	20	54.1	2	5.4	15	40.5	0	0

response to the second and third questions, the majority of responses were top-down in nature.

A tremendous amount of flux exists between pre- and postresponses within categories. For example, the 45.9% of top-down postcourse responses to the question, "What is reading?" comprised six subjects whose precourse responses were top-down in orientation, two students whose original responses were classified as bottom-up, and three whose original responses were classified miscellaneous. Three students whose initial responses had been categorized as-top down now defined reading as an interactive process.

Relationships between responses across statements for pre- and postcourse administrations were also analyzed (see Table 2). Precourse questionnaire responses were characterized by a lack of congruency across response statements. For example, in response to the question, "What is reading?" one student responded, "Bringing meaning to the printed page and enjoying it." However, this student would teach a young child to read "by teaching the individual sounds that letters make, blending those sounds together, and eventually giving them [the students] words."

By the end of the course, responses were more consistent, indicating that the preservice teachers' philosophies of reading were being reflected in statements regarding their pedagogical concerns. For example, in response to the question, "What is reading?" one student replied, "The ability to comprehend text." The same student stated that young children learn to read "naturally, when parents read favorite stories repeatedly." Chi-square analyses revealed significant differences in the consistency of responses across

TABLE 2
Consistency of Responses Across Statements

	Pre	Post	Chi-Square
Comparison 1: "What is reading?" and "How do you believe young children learn to read?"			
Consistent	17	35	20.958*
Inconsistent	20	2	
Comparison 2: "What is reading?" and "How would you teach a young child to read?"			
Consistent	5	20	13.592*
Inconsistent	32	17	
Comparison 3: "How do you believe young children learn to read?" and "How would you teach a young child to read?"			
Consistent	24	28	1.035
Inconsistent	13	9	

* $p < .05$

statements for comparisons 1 and 2. Comparison 3 differences were not statistically significant, due perhaps to the fact that both questions tapped preservice teachers' pedagogical concerns.

The last research question asked whether preservice teachers make instructional choices that are congruent with their theoretical orientations to reading. Descriptive analysis revealed that 84% of the students were able to do so.

CONCLUSION

Results indicated that preservice teachers' theoretical orientations about reading were traditional prior to course participation; moreover, perceptions regarding the reading process and how reading develops were not consistent with one another. Upon course completion, preservice teachers had adopted interactive and top-down beliefs about reading and were better able to understand the educational implications of their stated philosophies. In addition, most could plan and implement lessons that reflected their beliefs. In fact, students stated that they consciously thought about the congruence of their beliefs and their plans.

This study substantiates the results of the Stansell et al. (1982) study by providing evidence that preservice reading courses influence teachers' reading beliefs. This is encouraging in light of Gray's (1984) finding that preservice teachers are influenced by traditional views of the reading process based on recollections of their own reading instruction, a phenomenon that Britzman (1987, p. 221) calls "institutional biography."

Teacher educators can play a crucial role in adding to preservice teachers' "institutional biographies." Results of this study indicate that teacher education can help preservice teachers become aware of their implicitly held belief systems, develop alternative beliefs, and learn to plan and implement teaching practices that reflect personal philosophies.

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Changes in Primary Teachers' Instructional Practices After Year 1 of a Collaborative Whole Language Project

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A growing number of school administrators have become aware of whole language as an alternative and promising approach to promoting literacy instruction. Yet whole language encompasses more than this. It is a philosophy grounded in research on learning, language, and teaching (Goodman, 1991). Reading and writing are conceptualized as processes in which students construct their own meanings. In whole language classrooms, children become skillful and enthusiastic readers and writers through meaningful experiences. They learn to read from their writing and through shared reading of high-quality literature (Shanklin & Rhodes, 1989). Teachers and students work together as democratic communities of learners (Goodman, 1991).

Increasingly, administrators encourage teachers to attend workshops or take "whole language" university courses. Unfortunately, these settings are not conducive to educational change (Hord, Rutherford, Huling-Austin, & Hall, 1987). Moreover, this particular change requires teachers to give up accustomed, comfortable teaching styles and adopt new theoretical perspectives and roles (Nelson, Pryor, & Church, 1990).

Staff development experts have long known that after school, or even all-day, workshops fail to alter many teachers' attitudes. In these situations, teachers do not become knowledgeable about instructional strategies or proficient in their use. University courses can encourage teachers to rethink their literacy beliefs and practices; teachers can become acquainted with theory and learn some new instructional strategies. But such courses have two limitations: (a) the vast number of teachers entrenched in traditional practices fail to enroll and (b) courses are not long enough. Teachers find it difficult to absorb the new ideas they encounter or to experiment with more than a few new teaching strategies. When the course ends, they often are without supportive peers with whom they can continue to share ideas, problems, and successes. Further, in both workshops and courses, school principals, a vital component of instructional change (Smith & Andrews, 1989), are rarely present.

To avoid the above difficulties, research-based and workable staff development programs for obtaining change from traditional teaching to whole language should be developed. The following describes a staff development project focused on instructional change. The description includes discussions of the assessment measures, the changes observed in the teachers' literacy practices, and the importance of the study for improving instruction.

THE PROJECT

During the 1990–1991 school year, three Cleveland, Ohio, organizations collaborated to implement the project. The Women's City Club Foundation awarded 20 urban primary teachers one-half tuition and $500 each for classroom trade books. Cleveland State University provided research support services and released time for the project's director. The Cleveland Public Schools facilitated data collection and identified a school in which all 10 primary teachers agreed to act as a control group.

Two primary school principals requested the project and with their assistant principals, enrolled in the staff development program at their own expense. Seven female teachers volunteered at one school and 13 at the other. These women ranged in teaching experience from 0 to 23 years. In September, all but 2 of the teachers were evaluated as having a skills orientation to reading and writing instruction.

The schools differed in size and atmosphere. One was a small K-2 computer technology magnet school with 241 students, 10 classroom teachers, one computer instructor, and one Chapter I reading teacher. The principal held perceptions of literacy instruction that supported many traditional practices. Students' daily computer time was spent on games and skill work as well as story writing. Few stories displayed on hall bulletin boards appeared to be products of the writing process. Classrooms and halls were very quiet.

The seven project teachers in this school were distributed almost evenly among grades K through 2. When observed during three consecutive mornings in early fall, the teachers engaged in whole language activities from 0 to 31% of the time.

The other building was a larger K-3 school in which many of the 631 students were second-language or bilingual speakers, mostly Spanish but some Arabic. It had 26 classroom teachers, several of whom were bilingual. There were 6 Chapter I reading teachers and 3 ESL (English as a second language) teachers. The halls, the teacher lounge, and a centrally open library were places where teachers, bilingual aides, parents, and visitors interacted. Although the principal's orientation to reading was assessed as traditional, she was aware of many aspects of whole language. However, her efforts to increase whole language use among her teacher had failed. When some Chapter I teachers used whole language strategies in the regular classrooms, classroom teachers complained that those teachers were doing nothing more than "reading stories." When classroom teachers returned from district-wide whole language inservice sessions or from observing whole language classrooms in other districts, their reactions tended to be, "This won't work for me."

The 13 project teachers in this school were 2 Chapter I reading teachers, 1 ESL teacher, and 10 classroom teachers. One taught kindergarten; the rest were fairly evenly divided among grades 1 through 3. Among the classroom teachers, the principal confided, were several whom she had persuaded to join the group because they were the "toughest [to deal with] and the most resistant to change." All but 2 of the teachers held skills-oriented beliefs, devoting 0 to 40% of instructional time to whole language activities. The 2 Chapter I teachers and 1 ESL teacher held similar beliefs but devoted more time (50%, 75%, and 60%, respectively) to whole language activities. The 2 classroom teachers who were whole language proponents devoted a limited percentage of observed classroom time (28%, 43%) to activities congruent with that philosophy.

STAFF DEVELOPMENT

The staff development program involved teachers' and administrators' attendance at 20 sessions of a whole language course, for which each received academic credit. The course was held after school at each of the two sites and was scheduled approximately every two weeks for 90-minute sessions during the entire school year. The goal was for participants to see whole language instruction as a total approach to developing capable, literate children, not as a supplement to a skills-based approach (Bruneau & Ambrose, 1989). Some of the ideas and themes presented in the sessions were reading and writing processes; reading and writing connections; using children's literature; big books and shared reading; stages of spelling development and invented spelling; reading comprehension strategies, such as DR-TA and semantic mapping; and teaching children how to work in groups. Instructional strategies used in class meetings included modeling, large and small group interactions (discussions, problem solving, sharing), videos of effective classroom practices, instructor/teacher dialogue journals, experiential learning, and a discussion with a whole language teacher. Course assignments required teachers to analyze a child's oral reading, interview a student about his or her perceptions of reading, and use the following teaching strategies with students: read aloud to children daily, implement sustained silent reading, implement a series of lessons focused on a children's trade book, conduct a writing or reading conference, and guide children as they produced a class book. Teachers wrote personal and professional reactions to their experiences.

Scheduling the 30 hours of class time over the school year provided teachers adequate time between sessions to read, react, complete assignments, and discuss ideas and strategies with peers. As anticipated, all teachers needed the longer period of time to assimilate the new ideas. Indeed, some took several months to "buy into" the whole language philosophy.

In addition to teaching the course, the instructor provided on-site assistance through conferences, classroom observations, team teaching, and participation in group problem-solving sessions. In each school building, the instructor met with the principal and assistant principal to develop ways of supporting teachers—an important component of the project, since implementing new strategies often involves risk.

Four features deemed necessary for successful staff development were included. First, the project was school based; the school, not the individual teacher or the school district, was the unit of change (Goodlad, 1984). Second, the plan included long-range commitment. It gave people adequate time to change and gain confidence utilizing new procedures (Hord et al., 1987). Third, it involved the school's principal and assistant principal. Without the building administrators' understanding and support, staff development might have been doomed. Fourth, it provided teachers with opportunities for frequent reflection, sharing ideas, and problem solving (Shanklin & Rhodes, 1989).

Inclusion of these research-based features meant that participants experienced the same elements of whole language that they were expected to provide for their students: participating in decision making, encouraging risk taking, and becoming a community of learners. The instructor's role was that of both colleague and advocate. As the year progressed, the class and instructor modified course assignments to better suit participants' needs. Teachers not only invited the instructor to their classrooms to assist or observe, but also asked that their successes be communicated to the principal and assistant principal.

ASSESSMENT MEASURES

Data for the study were collected from classroom observations of language arts instruction, self-administered scales of teachers' reading orientation, and interviews about the teachers' beliefs about reading instruction. The same collection procedures were completed with a small sample of teachers in a comparable school (control school), and changes in beliefs and behaviors were determined. Results of the classroom observations are reported below. Changes in reading orientation and beliefs have been described in an earlier paper (Kraus & Boehnlein, 1991).

To measure the extent to which teachers' literacy instruction changed, a trained assistant observed 19 experimental (1 teacher was not able to be observed) and 10 control teachers for three successive mornings at the beginning and end of the school year. Teachers had agreed to the scheduled observations and understood that they were to teach in their usual manner. Because special teachers (art, music, computer) often instructed a class for blocks of time, total lengths of observations varied from 139 to 621 minutes, with both the mean and median near 430.

The observer described and timed teacher behaviors without identifying the behaviors. This was done later, using a modified version of the Categories for Teacher Behavior Observational Instrument (Hollingsworth, Reutzel, & Weeks, 1990), originally devised to categorize traditional and whole language practices in first grade reading instruction and to account for noninstructional and transition time. The categories and descriptions of the original instrument were applicable to the purposes of the present study.

Examination of the observers' written protocols, however, indicated the need for three additional categories and several more descriptions to (a) identify teacher practices in writing, oral language, and content reading instruction, as well as in regular reading instruction; (b) augment descriptions of noninstructional and transition activities; and (c) note when the class was taught by a special teacher (e.g., the art teacher) or when students went to another room for instruction (e.g., computer lab).

There were nine whole language categories in the revised instrument. The teacher

1. Instructs using whole stories, poems, or books.
2. Emphasizes the meaning of language.
3. Uses whole texts appropriate to specific contexts to teach reading strategies.
4. Utilizes brainstorming and predicting to build background experiences for instruction.
5. Provides examples.
6. Encourages trying and risk taking.
7. Evaluates informally.
8. Facilitates writing, using the writing process, children's literature, and students' own writing.
9. Encourages oral language with student/student, as well as teacher/student interaction.

In the 13 traditional categories, the teacher

1. Instructs using basal reader, workbooks, or worksheets in reading, spelling, or English.
2. Emphasizes the isolated parts of language.
3. Employs fragmented language units and instruction.
4. Focuses on small steps in skill acquisition, assigns and gives directions and explanations for seatwork or homework.

5. Waits while students read silently.
6. Monitors oral reading.
7. Oversees assignments.
8. Uses advanced organizers to build background for instruction.
9. Teaches by precept.
10. Stresses correctness and accuracy.
11. Evaluates formally.
12. Facilitates writing by assigning topics and serving as the primary source for revisions and/or corrections.
13. Encourages oral language mainly through teacher-dominated, teacher/student interactions.

CHANGES IN PRACTICE

First-year results of the two-year project were positive. Overall, teachers in the project changed their beliefs about how children best learn to become literate, independent readers and writers. As expected, the teachers, most of whom were skills oriented, did not become whole language teachers over the eight-month period. However, analysis indicates that the beliefs of the project teachers moved decidedly toward the whole language end of the instructional continuum, while the beliefs of the control school teachers remained at a skills orientation (Kraus & Boehnlein, 1991).

Teachers' practices reflected their beliefs. The project teachers did not change completely from using skills to whole language instruction. In general, however, time spent on practices labeled as whole language increased dramatically while those labeled as traditional decreased.

The time spent on the different categories of instructional behaviors was analyzed by percentages since actual observed minutes differed. Time during which children were taught or supervised by a teacher other than the focal teacher was not included. The percentages of time that teachers spent using whole language, traditional, and noninstructional behaviors were calculated. The experimental group's whole language behaviors increased 34.25%, and traditional behaviors decreased 27.38%. Behaviors rated as noninstructional (e.g., recording grades, giving instructions to an aide) also decreased somewhat. In contrast, the percentage of time control group teachers spent on whole language and traditional behaviors changed little from pre- to postobservations, both decreasing slightly (whole language -5.19%; traditional, -2.71%).

The change made by the experimental group is even more striking when noninstructional behaviors are eliminated from the analysis. Teachers reduced traditional and increased whole language practices by more than 41%. For example, project teachers used the basal reader and manual less and children's literature more. They decreased use of round-robin oral reading, substituting paired and assisted reading. They assigned fewer skill worksheets and began to teach "skills" from stories and poetry. They modeled reading and writing strategies and guided the children in applying them in meaningful activities. Children responded to literature through drawing, making story maps, drama, and writing. These activities also began to supplant literal-level questions as vehicles for the development of reading comprehension. In contrast, the control group's practices remained virtually the same.

SUMMARY AND IMPORTANCE

The results from the first year of the project support the view that on-site, long-range staff development, which actively involves teachers and their principals in whole language experiences and a supportive environment, can effect change. In these circumstances, even teachers initially resistant to new ideas modified not only their beliefs about literacy development but also their instructional practices. It was vital for teachers who were learning new ideas and experiencing new strategies as students in class sessions to experiment with new approaches in their own classrooms. They were also able to discuss these approaches in conferences with peers and supportive administrators. Often teachers' beliefs changed after, rather than before, trying whole language activities with their students. Interaction between teachers and administrators was critical. Even though administrators became increasingly supportive of whole language instruction, it took months for some teachers to believe that they were truly being allowed and encouraged to teach differently.

Anecdotal evidence also reveals changes in teachers' attitudes and practices. Journal and class comments reflected increased understanding of whole language and enthusiasm for teaching. Many teachers spent time during the summer preparing whole language activities for the next school year. Teacher requests to principals revealed whole language goals: large blocks of uninterrupted teaching time; more trade books; and opportunities to work together, planning thematic units and sharing teaching ideas and experiences. Individuals and small groups proposed solutions to common problems (such as scheduling) and presented these for the principal's consideration.

One third grade teacher's change symbolizes the project's success. This teacher seemed "burned out" at the beginning of the year. Almost every journal and class comment was negative. For most of the year, she complained that her students were too undisciplined to accomplish much and certainly wouldn't respond to whole language. In January, she nearly dropped out of the project. But in late spring, she shared some student products for the first time. Beaming, she showed the wonderful stories some of her students had written in response to a book they were reading. Her final journal comment indicated a new outlook: "There is a lot I still need to learn. But there's always next year. Time is my enemy. I'm glad I stuck it out. I am going to teach this way from now on!"

A one-year experience is much better at effecting change than a short workshop or course. But even one year is only a beginning. Teachers who "discovered" whole language during the year, as well as those who deepened and broadened their perspectives, have requested continued interactions with and assistance from the instructor, their administrators, and their peers. Those interested in successful staff development need to provide teachers and administrators the necessary time, experiences, and support to make change happen.

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RESEARCH AND PRACTICE IN LITERACY INSTRUCTION

Grouping for Reading Instruction in the Multicultural Classroom: Dilemmas and Solutions

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Ability grouping for reading instruction became prevalent in American elementary classrooms in the early 1900s and remains so today (Barr & Dreeben, 1991). Traditional ability grouping for reading, however, has been the focus of educational and sociological research for many years. Educators, parents, and policymakers are concerned about the quality of instruction provided through grouping and the messages that grouping structure may give children about their own and other's capabilities. Teachers and researchers have recently begun experimenting with methods of reading instruction that do not require traditional ability grouping, partly in response to concern about its negative effects. This paper will (a) provide a brief overview of research related to the effects of traditional reading ability grouping and (b) examine several alternative classroom structures.

GROUP PLACEMENT

Reading group structures are designed by school administrators and individual teachers who wish to provide each child with appropriate instruction. Group placement decisions are generally made at the beginning of the school year based on reading test scores and other achievement information (Haller, 1985; Haller & Waterman, 1985). Children in the same group are usually taught together throughout the year using the same basal reader. Group placements frequently continue into subsequent school years, sometimes continuing to high school tracks (Barr & Dreeben, 1991; Gamoran, 1986; Hallinan & Sorensen, 1983). In this way, reading group structures may "lock students into long-term success or failure" (Worthington, 1991, p. 3).

READING GROUPS AS MIRRORS OF SOCIETY'S CLASS DIVISIONS

In schools where children come from different socioeconomic or ethnic backgrounds, grouping practices may result in groups that reflect social class structure. It has been found repeatedly by large-scale sociological studies that poor children, many of whom are members of ethnic minority groups, are disproportionately placed into low reading groups (Goodlad, 1984; Haller & Davis, 1981). Within a given classroom, therefore, it would be commonplace for children in the low group to be economically poorer and ethnically different from children in the high group.

Although it has been charged that low group placements may reflect teacher biases against poor children, several recent studies have found that teachers base their grouping decisions on reading test scores and classroom performance rather than race or home-related factors (Haller, 1985; Haller & Davis, 1981; Haller & Waterman, 1985). Using test scores for the placement of poor or ethnically different children is problematic, however, because differences in background knowledge and dialect can negatively influence reading test scores (Burke, Pflaum, & Knafle, 1982; Pandolfo, 1985; Steffenson, Joagdev, & Anderson, 1979).

Even when group placements are accurate, placing children into groups that divide them according to ethnic background and social class greatly concerns many educators and parents (Slavin, 1987). During school desegregation in the 1960s and 70s, members of the African-American community worked to prevent resegregation of their children within the newly integrated settings (Epstein, 1985). In many cases, resegregation did occur, especially in special education programs (Office of Civil Rights, 1979), although court orders, such as the desegregation plan for Cleveland, clearly mandated the opposite (Fleming, 1980).

Today, schools across the country are rapidly becoming more culturally diverse. If schools or individual classrooms are structured by groupings that mirror divisions in American society, children may get the message that people of different backgrounds should be separated. This message may affect children's self-esteem, beliefs about their own and other's capabilities, and their academic progress. In addition, reading educators are becoming increasingly concerned that children in low reading groups may receive less effective instruction than children in high reading groups.

LOW GROUP VERSUS HIGH GROUP INSTRUCTION

Although the purpose of grouping is to help provide each child with appropriate instruction, research has not supported the notion that ability grouping improves achievement for most children. A meta-analysis of more than

50 research studies found that ability grouping was not usually related to improved elementary student achievement (Slavin, 1987).

Grouping arrangements, of course, do not dictate instructional practices (Hiebert, 1987). As Gamoran (1987, p. 341) points out, "Grouping does not produce achievement; instruction does." However, teachers may make inappropriate assumptions about children's needs based on their reading group placement, which may result in ineffective instruction (Wuthrick, 1990).

In the past two decades, several researchers have focused attention on the differing types of instruction children receive in reading ability groups. Although the purpose of grouping is to differentiate instruction, the crucial question is whether the differential instruction is effective (Barr & Dreeben, 1991). A number of studies have shown that children in low groups may frequently receive less effective instruction than children in high groups.

In an early ethnographic study, Rist (1970) found that primary grade children in a low group received a lower quality and quantity of teacher attention and instruction than did children in higher groups. More recently, studies have found that some teachers expect children in low groups to be less attentive than high-group children (Eder & Felmlee, 1984) and to answer far fewer questions requiring abstract thinking (Dowhower & Speidel, 1989).

In addition, children in low groups often spend less actual time reading than do children in high groups (Allington, 1980a; Eder, 1981) and are expected to read orally more often (Allington, 1980b). As a result, children in low groups may read fewer words than children in high groups. Teachers may also encourage students in high groups to focus on comprehension but those in low groups to focus on decoding (Hiebert, 1983). In addition, high group members may be taught to use meaningful contextual clues in correcting reading errors, while low-group members are directed to look for phonetic cues (Allington, 1980a). These studies suggest that efforts to provide appropriate instruction to poor readers through reading groups may, in fact, adversely affect the type of instruction provided and make learning to read more difficult.

In summary, it is often reported that the difference in reading achievement between good and poor readers increases dramatically as children move through elementary school (Goodlad, 1984; Hiebert, 1983). Poor children have been described as "at risk" for reading failure (Carroll, 1987). Reading ability groups often separate children by class and ethnicity and may influence the quality of instruction they receive. Teachers and administrators must carefully analyze whether they are increasing the risk by their grouping practices for reading.

ALTERNATIVES

Fortunately, educators across the country are currently developing alternatives to traditional reading ability groups. Worthington (1991) points out that alternatives to ability groups are frequently used in other elementary subject areas. Teachers can be encouraged to use a variety of learning situations for reading such as interest groups, cooperative groups, independent/individualized reading, whole-class minilessons, reading partners, and computer lessons (Vacca, Vacca, & Gove, 1991). Different grouping patterns are appropriate for different activities and goals.

Grouping practices in whole language/literature–based programs often vary dramatically from traditional reading ability groups. Children may read and write independently, conferencing occasionally with other students and teachers in a workshop format (Atwell, 1987). At other times, they may form cross-ability interest groups, reading one book together or different books on the same topic. Reading skills previously taught through traditional ability groups are generally taught in context on an as-needed basis, to individuals or small groups of children who would benefit from a particular lesson (Vacca et al., 1991).

Hiebert and Fisher (1990) found a variety of individual, small group, and whole-class instructional patterns in a study of instructional practices in whole language classrooms. However, the authors were concerned that they observed no instances of teacher-directed small groups. Hiebert and Fisher suggest that teachers give more attention to developing ways of appropriately including temporary teacher-led groups, based on ability or other criteria, into whole language instruction.

Small collaborative or cooperative grouping arrangements have been successfully used to improve the achievement of learners at all ability levels (Slavin, 1983) and to improve race relations (Brandt, 1989–90). Several experimental and field studies have shown higher reading achievement for students working together rather than individually (Barr & Dreeben, 1991). For collaborative or cooperative groups to be successful, teachers need to design tasks carefully and help students learn the skills of working together (Vacca et al., 1991).

In conclusion, when designing classroom reading programs, teachers should consider the effects of the classroom structure on instruction and on children's attitudes toward learning, themselves, and each other. Informed employment of alternatives to traditional ability groups can help teachers provide both positive instructional experiences and more equitable opportunities for children of all backgrounds.

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Story and Song: Integrating Music into the Literature Curriculum

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Music is a part of life. Indeed, it is a *big* part of life. We are continually bombarded with elevator music of various sorts—on television and radio, in doctors' offices, elevators, shopping malls, college dormitories, churches, on the telephone, at the beach—wherever we are. It would appear that one of the fundamental aspects of life, as we know and experience it today, is music in all its forms. In our schools, however, there is another side to the story. In school, music is identified as one of the fine arts, and fine arts are becoming an area of secondary interest for most students and of primary interest for only a few. This lopsided view of music in the schools reflects the growing indifference toward "what human beings should experience and could become" (Eisner, 1987, p. 12).

MUSIC AS A BASIC?

Music is an art form that should be considered a "basic" in our schools. Music brings meaning to life; it is one of the few curriculum areas that deliberately deals with the affective domain; it makes us feel good; it is communication beyond the spoken or written word; and it brings relief from daily stresses and frustrations. Beyond these intangibles, music further provides concrete results as well: It can facilitate muscle development; it demands that students learn to read, write, and interpret complex symbols; it develops personal discipline; it aids in developing social skills; and it helps develop the ability to cooperate as a group member in working toward a common goal (McCornack, 1984).

However, reports on the state of education, such as one by the National Commission on Excellence in Education, continue to insist that students today need more study in English, math, science, social studies, computer science, and foreign languages. As the key to boosting sagging achievement scores of American students, those "basics" are emphasized at the expense of music and the other fine arts (Thoms, 1984).

I am a teacher of English and language arts who also happens to love music in nearly all its forms. I recognize the fact that not all students are talented in music and may shy away from it, but I am also cognizant of those students' abilities to enjoy the musician's response to the world, which corresponds closely with the more familiar written responses of writers of prose and poetry. Indeed, these art forms have so much in common that they appear to be *designed* to go together, in a classroom setting and elsewhere.

This article reflects both my belief in music as a fundamental part of the school curriculum and my personal commitment to my own students to connect music with literature as a pathway to expressive, meaningful experiences.

MUSIC AS A FINE ART

The fine arts are ends in themselves. They aim not to provide a useful end product but to communicate experience. Both music and literature are recognized as fine arts and share many common threads. Both are intended to be heard (literature originated as oral tradition). Both must be contemplated in an order of some kind—we cannot enter a poem or a symphony at some randomly chosen point and flounder this way and that until we have had enough. Rather, we enter at the beginning and proceed sequentially through the piece until we reach the end. Both arts demand a retentive memory on the part of the listener—we have to remember certain parts of a story, for example, for the rest of the story to make sense. Similarly, parts of a musical composition must be remembered in order to recognize a theme when it is repeated (Brown, 1987). Musical notes and lyrics are read in much the same manner as are words in a story or poem, and the oral language of literature has a natural rhythm much like that of songs (Smardo, 1984).

These and other commonalties lay a fairly solid foundation for an integration of the two arts in question, and they make the job of the teacher who integrates easier.

MUSIC AS IMAGINATION

Perhaps an even stronger link can be found in the imagination. The musician and the writer or reader must combine intellectual skills with imagination, a prolific combination that is responsible for many of our greatest inventions and discoveries (Aaron, 1984). Coleridge described the imagination as "the creative power to reconcile opposite or discordant qualities into one organic whole" (Brown, 1987, p. 102); and it is of this that Sylvia Plath spoke in her writing:

> What I fear most, I think, is the death of imagination....It is that synthesizing spirit, that shaping force, which prolifically sprouts and makes up its own worlds with more inventiveness than God which I desire. If I sit still and don't do anything, the world goes on like a slack drum, without meaning. We must be moving, working, making dreams to run toward; the poverty of life without dreams is too horrible to imagine. (Thoms, 1984, p.27)

It is the death of imagination, perhaps, that may be avoided in part through decreased emphasis on standardized test scores and greater emphasis on the creative and humanizing powers of the fine arts.

MUSIC AS BASIC CURRICULUM

Eisner (1987) focused on the virtues of integrating the arts into the basic curriculum. We need, he said, to help children learn to "see what they look at, hear what they listen to, and feel what they touch" (p. 12), all experiences provided by the arts. Students need help in stretching their minds beyond the literal and rule governed to recognize that there is not always a single certain answer to many questions.

In the face of growing concerns for our population's cultural literacy (or lack thereof), Eisner (1987) makes another frightening prediction: "We don't need to *burn* books—just don't *read* them for a couple of generations—and we will leave our children unable to deal with more than 'Wheel of Fortune' or 'As the World Turns'" (p. 15). Children must have meaningful access to their cultural heritage or they will never find it.

By devoting attention to the integration of music and literature, perhaps a small step may be taken in the direction of restoring imagination and creativity to school curricula and to a generation of students who otherwise may be deprived of those qualities of life for want of a good SAT score.

SOME STARTERS

An article of this nature is not complete without at least a few start-up activities to give the interested teacher a beginning point for the integration process. My own efforts began with a Christmas unit I did about six years ago with my seventh grade literature classes. Since we were studying literature, "The Twelve Days of Christmas" came to mind, and I found a sound filmstrip version of the piece. Even though the students obviously felt foolish about it at first, they were soon singing vigorously along with the tape, becoming almost gleeful as they belted out, "And a partridge in a pear tree-e-e-e-e!" Following that, I read them "The Italian Twelve Days of Christmas" ("And a bigg-a bowl-a parmesan-a cheese!"), which I had picked up from a morning radio program on my way to school and hastily scribbled onto a paper napkin. From there, they were off and running, working in pairs to create their own versions ("The Twelve Days of McDonald's," "The Twelve Days of Shopping," etc.) and singing them to the class. Some were very clever. As a closing activity, I sang to them "The Twelve Days After Christmas," the tale of what the lady does with the plethora of gifts from her lover. They loved it!

Another successful activity this past year involved teaching T.S. Eliot to my fifth graders. "The Old Gumby Cat" was in our literature book and proved so enchanting to the students that I expanded it into a short unit. We listened to a tape of Eliot himself reading the poem and then to a recording of the same poem from *Cats*. Again, the students were soon singing along. We did similar activities with "The Rum Tum Tugger" and "The Naming of Cats." All of these generated much discussion of similarities and differences.

A teaching experience at the Governor's School for the Gifted in Humanities at the University of Richmond during July 1989 provided more ideas and integrative activities. I team taught a class of gifted rising seniors that integrated the study of music, literature, and philosophy. Students were exposed to classical music that related stylistically and thematically to works of literature and their correlating philosophies, and they were encouraged to draw parallels and identify patterns among the three arts. Works by Scriabin, Scarlatti, Bach, Chopin, Healy-Hutchinson, and some Negro spirituals were tied to novels by Kate Chopin, Toni Morrison, Hermann Hesse, and Lewis Carroll and were integrated with philosophy wherever possible. Large and small group discussions, writing, listening, and performing were all utilized. Student evaluations at the end of the four weeks expressed positive reactions to the integration of the three art forms.

One day I took my seventh graders into the library where we had laid out prints of great paintings. I gave the students time to study the paintings, and asked them to pick a favorite and create a poem that might be realized from their study. Poems evolved. The next day, I played "The Mephisto Waltz" by Lizst. We talked about selling one's soul to the devil, we discussed the story of Faust briefly, and then I asked for poems based on their impressions of the music, which I replayed while they wrote. I chose some of the better efforts from these two days and submitted them to the local newspaper, where four or five appeared in print the following week.

Engaging students in movement activities (simplified folk dance forms) has proved effective in teaching beat, rhythm, repetition, and pattern.

OPEN SKY

Marcel Proust, in his *Remembrance of Things Past*, has Legrandin saying to the narrator:

> Oh, I admit…I have every useless thing in the world in my house there. The only thing wanting is the necessary thing, a great patch of open sky like this. Always try to keep a patch of sky above your life, little boy.…You have a soul in you of rare quality, an artist's nature; never let it starve for lack of what it needs. (Thoms, 1984, p. 28)

Lest music and the other fine arts become remembrances of things past, it is imperative that we keep them as a "great patch of open sky" in our school curricula. Only in this manner can we prevent the death of imagination and provide expressive, meaningful learning experiences for our students.

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The Reader as a Sleuth:
Engagement by Intrusion

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Reading is a process and product of human learning. As such, reading involves ideas based on prior experiences and knowledge stored in memory. Situations depicted in words on a page stimulate memory of these experiences and bring meaning to reading (Aukerman, 1972). What is stored in memory depends to a considerable degree on our senses of sight and hearing. But other senses also make their contributions. Consider for a moment the various memory systems activated by the following phrases: the smell of fresh cut grass, the salt water taste of an ocean swim, the taste of vinegar, using a rasp to smooth a piece of wood, breaking a finger nail. Together, the senses combine to make reading both a cognitive and affective learning activity.

Often during reading, there are situations or circumstances that spark the mind to venture and pursue a related path of tangential interest. This is more often a spontaneous act ignited by the reading itself or a peripheral thought. In either case, it is an intrusion. An intrusion can also be a deliberate interruption brought about by an outside event. In a classroom, the teacher can guide the student in this endeavor. The focus of this paper is to demonstrate how literature can be intruded upon by other subject areas whose primary source of study is expository text. Specifically, this paper demonstrates events portrayed in the genre of the detective novel that can be scrutinized by analyzing other subject areas (i.e., science and mathematics).

ACTIVATING "INERT" IDEAS

Much school learning consists of routine presentations with little effort directed at engaging students in using and applying newly acquired facts and ideas. When subject matter is confined within a particular content area, new information may be perceived as being artificial by those students who lack a situational context that links new ideas to existing knowledge (Alvarez, in press). In these circumstances, students are given information without consideration of their world knowledge and experience. This notion of telling either by the teacher or the text is what Charles Gragg (1940) warns against in his essay "Because Wisdom Can't Be Told." His caution does not preclude learning under this mode, for it is possible that students can be given information that is learned through rote memorization. But such information may not be spontaneously retrieved in settings other than the one in which it was introduced (Bransford, Franks, Vye, & Sherwood, 1989). Whitehead (1974, p. 4) refers to this state of education as consisting of "inert ideas"—"ideas that are merely received into the mind without being utilized, or tested, or thrown into fresh combinations." To activate inert ideas, learners need to be provided with reading materials and assignments that stir their imaginations and stimulate critical thinking in problem-solving contexts.

Reasoning in school is different from reasoning in real-world settings (Petrie, 1992; Roy, 1979). School-related problems are often prepared for students to solve in ways that do not necessarily apply to real-world problems. Real problems demand innovative reasoning that focuses on how the real world operates. Students need to be confronted with problem situations that relate in-school theoretical knowledge (thought) to out-of-school practical knowledge (action). The role of imaginative literature is a powerful influence in students' intellectual development (Coles, 1989; Eanet, 1991).

As one reads a novel, a certain degree of reflective thinking and repositioning is incurred as hypotheses are formulated and meanings reconstructed. Some argue that this reformulation occurs more frequently in detective stories (e.g., Porter, 1981). This reformulation of events in detective novels requires an understanding of in-school theoretical knowledge and practical knowledge of real world situations. The notion that thought and action work in close proximity, Petrie (1992) argues, is a way in which the disciplines are used in an integrative fashion as a means of solving practical problems that include ways of thinking about these disciplines. Formulating connections between events and objects among disciplines in formal settings is one way for enhancing conceptual understanding of real problems confronting society.

Historians, scientists, and literary critics are like detectives in that they seek evidence to reach conclusions (e.g., scientist/detective, Alvarez & Risko, 1989; critic/detective, Porter, 1981; historian/detective, Hockett, 1955; Klotter, 1989; Rayback, 1949; Winks, 1968; physician/detective, Accardo, 1987; Van Liere, 1959). The genre of the detective novel, a narrative, can connect with expository prose. For example, a comparison between Sherlock Holmes' blood identification procedure used in "A Study in Scarlet" (Doyle, 1905) can be contrasted with the procedure used by physicians and chemists during that same 1875 time period. Students can be asked to investigate modern day blood identification techniques as a comparison. Events leading to the discovery and the subsequent diagram of a corpse can be used to solve mathematical problems. This intermingling of narrative and expository discourse across disciplines requires knowledge activation, critical thinking, and schema construction in order to occur within students (Alvarez, in press; Alvarez et al., 1991; Alvarez & Risko, 1989; Norris & Phillips, 1987; Potts, St. John, & Kirson, 1989).

When reading a detective story, the reader becomes the juror of the presentation of evidence by the writer and of the authenticity of the writer's conclusions. Taking a juror's stance when reading a mystery is not unlike the stance a reader assumes when engaged in expository reading. Again, the reader tries to make sense of an author's portrayal of events. The reader becomes engaged in expository reading, as a juror, and takes on the roles of detective and scientist. Detectives and scientists are primarily concerned with the causes of events and rely on observation to gather evidence. Detectives look for clues and investigate events surrounding a case; scientists use interviews and tests. Detectives and scientists form hypotheses based on their prior knowledge about the cause of the events and rule out those that are unreasonable. Both, detectives and scientists, tend to be extremely cautious about their conclusions for similar reasons. Their conclusions must withstand critical scrutiny of a jury of peers or a court of law. An important difference between detectives and scientists is in the way they form and use generalizations. Scientists are concerned with arriving at general statements that allow grouping of apparently dissimilar events under a single rule or generalization. Detectives are more interested in breaking down or narrowing generalizations in solving their cases rather than in establishing generalizations that might be produced from their work.

THE SCIENCE OF DEDUCTION

The science of deductive reasoning is found in the writings of Voltaire (1964, pp. 28–31) in 1747. In Chapter 3, Zadig deduces that a lost dog, whom he has never seen, is not a dog (a male canine). "It is a little Spaniel bitch....She has recently had puppies, she limps in the left foreleg, and her ears are very long." Zadig explains his deductive reasoning. While walking in the woods, he discerns dog tracks in the sand; that it is a female from the "furrows, traced in the sand" between paw prints that indicates "a bitch with hanging dugs, which must therefore have had puppies a few days before." The long ears were discerned from the tracks that "brushed the sand at either side of the forefeet," and the lameness from the impression of the sand being more indented "by one paw than by the other three."

A. Conan Doyle brings the science of deductive reasoning to new heights in his Sherlock Holmes stories. Saferstein (1983) writes that the first crime laboratory was started in 1910 by a French criminologist, Edmond Locard, who was inspired by Conan Doyle's *The Adventures of Sherlock Holmes.* Throughout his stories, Holmes astounds Watson with his deductive reasoning abilities. A statement that may pique students' interest can be found in the story "A Study in Scarlet." Watson, quoting from *The Book of Life* written by Sherlock Holmes, states:

> From a drop of water...a logician could infer the possibility of an Atlantic or a Niagara without having seen or heard of one or the other. So all life is a great chain, the nature of which is known whenever we are shown a single link of it. (Doyle, 1905, p. 23)

APPLYING SCIENTIFIC REASONING AND MATHEMATICS TO OUR DAILY LIVES

Students have opportunities to relate what they see and hear to what they read. While visiting a high school, I saw an outline of a body sketched on the library floor. Immediately this scene evoked vivid images of Agatha Christie's *The Body in the Library.* At another high school, I encountered a similar body outline in the hallway. I asked the significance of this outline to passing students. "There is none." "The seniors just did it." With a little imagination by the mathematics teacher, however, such an outline can be related to the many situations described in detective fiction as well as to those same images projected in television shows and movies. Mathematical problems can be developed using this body outline to obtain the height, weight, position angles, and so forth.

Another procedure for involving students with mathematical problems is to present examples from criminology texts. Referring students to situations described in such texts involves the student as a problem solver in a meaningful context. For example, O'Hara and Osterburg (1949) develop such an application in their presentation of a motor vehicle homicide about which an expert testifies that the defendant's car was traveling at the illegal rate of 36.85 mph.

> This presumably four-figured accuracy may have no justification in the data. The correct conclusion may be that the car had been traveling at a speed between 30 and 40 mph. If the value of the speed attested to by the expert is close to the legal limit, say 35 mph, and forms the basis of the court's decision, it may happen that the defendant is unjustly found guilty. A correct treatment of the data and presentation of the conclusions would prevent such a miscarriage of justice through the misuse of science. (p. 39)

Although the authors explain how to treat these kinds of data, the students make the connection between formulas and mathematical computations used in real-life situations. The teacher can either use the examples provided from these cases or devise problems in similar situational contexts using supplemental texts that present the application of mathematics to everyday events.

MAKING CONNECTIONS BETWEEN THE PAST AND PRESENT USING SCIENTIFIC PRINCIPLES

Bridging the gap of the present and the past can be illustrated by the following two cases: comparing the typewriter with the computer and comparing Sherlock Holmes' blood identification test to present-day methods. The use of typewriter keys as identifying marks in solving criminal cases had its beginnings in a Sherlock Holmes story. An individual's handwriting was compared to that of a typewriter typescript. "It is a curious thing...that a typewriter has really quite as much individuality as a man's handwriting....Some letters get more worn than others, and some wear only on one side" (Doyle, 1905, p. 199). This story was published in 1891, 21 years after the first practical typewriter was invented in 1867, and before such a technique was used in any actual case (Walls, 1976).

Students can compare the events portrayed in this story to typewritten messages typed on personal or school typewriters or compare the type of letters and words to deduce fonts (e.g., roman, san serif) and type of printer (e.g., dot matrix, laser). This analysis can be conducted with messages typed and printed from various makes of typewriters, computers, and printers, using questions such as "Does the imprint of the letters signify letter differences as in the typewriter?" "Are there differences in the degree of impression made on a piece of paper by the keys of a typewriter when compared to a dot matrix or laser printer?" "Can you identify the kind of printer used in these messages?"

The implications of such a lesson apply to science that affects our everyday lives. For example, many students are aware of how the forces of friction can wear metals, as in the impact of typewriter keys on the platen. They can apply this principle to the use of the dot matrix versus the laser printer. Laying aside the differences in letter quality, students may be interested in how the FBI laboratory and state police crime laboratory are limited in their identification of laser printers but are presented with more data from a dot matrix printer. A dot matrix printer can be identified by make and individual machine due to the impressions made by the keys, unlike a laser printer that cannot be identified by individual machine because ink is sprayed on paper.

Another interesting case is the comparison of Sherlock Holmes' blood identification test to those used in present-day criminology. The analysis of blood stains is prominent in detective novels and television and movie portrayals. Although blood stains can be identified, they cannot be attributed to a specific individual. A statement such as "This blood stain originated from that particular person" cannot be made since there is currently no method of assigning individuality to any particular person. However, the statement "This bloodstain did *not* originate from that particular person" can be substantiated because characteristics of blood group systems and blood constituents have been identified and classified (Tedeschi, Eckert, & Tedeschi, 1977).

An intriguing reading concerning the testing for blood stains is revealed in "A Study in Scarlet" (Doyle, 1905). Watson first meets Holmes, who is engaged in an experiment that he is soon to discover as "an infallible test for blood stains" (Doyle, 1905, pp. 17–18). Holmes mixes a drop of blood in a litre of water. Then he adds a "few white crystals" and "a few drops" of a transparent fluid. The contents of the beaker yields "a dull mahogany color, and a brownish dust was precipitated to the bottom of the glass jar." Holmes compares this procedure to the guaiacum test that he calls "very clumsy and uncertain." He also dismisses the microscopic examination for blood corpuscles for the same reasons, especially if the blood stains have been allowed to set for hours before analysis.

This excerpt provides a thread for further investigation. A lesson on bloodstains can be developed that presents students with a reading of "A Study in Scarlet" (Doyle, 1905) and then compares the Sherlock Holmes test with those described by Gerber (1983) in *Chemistry and Crime* (see also Asimov, 1980; Baring-Gould, 1962). Students can determine whether the procedures described in the novel are credible given what was known about blood identification in 1875. This would lead them to make comparisons to present-day analyses and procedures (e.g., Huber, 1989; Simpson & Knight, 1985).

CONCLUSION

The detective genre lends itself not only to intrusion into expository texts used in other subject areas but also as a vehicle for testing facts in narrative discourse with facts from other disciplines. Each of us is a detective, scientist, historian, and critic in that we engage in deductive and inductive reasoning in everyday common occurrences that require reconstructing past events from present evidence. From these reconstructions, we form generalizations (e.g., the small muddy footprints interspersed with paw prints on the carpet is evidence that allows us to deduce that our son and dog have not wiped their feet).

The reader, as a philosopher, scientist, historian, or critic, is a problem solver, similar to the detective who searches for clues. The degree to which problem-solving abilities are used to reason, make deductions and inferences, and increase one's mental model (our structure of reality), the better able one is to solve difficult tasks and problems. Combining related narrative and expository discourse in an area of study enhances critical thinking and schema construction. Providing authentic materials and problems allows students to formulate their own strategies in accomplishing learning outcomes. These outcomes result from teachers and students engaging in shared learning contexts in which meaning is negotiated in a mutually adaptable environment.

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Overcoming Environmental Obstacles to Reading: A Comparative Analysis

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Reading is the key that opens the door to understanding and effective participation in the global community. However, the environmental factors that enhance reading vary in different parts of the world. A comparative analysis of the home and societal environments in the developed and developing world suggests that many different factors influence reading success or failure. Reading conferences, workshops, seminars, and research have addressed the issue of the lack of motivation to read in the developed world. Changing societal values on education, inadequate school funding, lack of discipline, inadequate student and parent interest, and family instability have also been addressed. This article examines some additional influences.

Research has long substantiated the significance of literate societal and home environments on children's reading and writing success (Cohen, 1968; Cullinan, Jaggar, & Strickland, 1974). Barron and Burley (1984) note that children learn at least half of all they will ever know before they reach the age of four. An additional 30 percent of their knowledge is accumulated by age eight. Researchers have found that children who are introduced to books at an early age and who are read to on a regular basis become better readers themselves (Taylor, 1983; Teale, 1986).

A literate home environment is a place where books, magazines, newspapers, encyclopedias, and other reading materials are readily available. Specially selected children's books are read to children in the home regularly. Additionally, the parents, older siblings, and other adults living in the home engage in recreational reading themselves. Further, positive attitudes toward reading are expressed by family members, and children are guided in developing wholesome attitudes toward reading and books (Botel & Seaver, 1977; Seaver & Botel, 1989).

However, promoting reading and literacy in the developing world is difficult and problematic. The authors have identified factors that can influence reading activities of students in developing and developed countries (KaiKai & KaiKai, 1992). The first author was born and raised in the developing nation of Sierra Leone, West Africa. The second author has lived in the developed world, traveled extensively in the developing world and has had long-term contact with students from developing and developed nations. Additionally, the first author has taught high school and college for many years in both environments. Both authors have conducted comparative research on the home and societal aspects of the two environments.

The model in Table 1 contrasts the home and societal environmental factors for students in less developed and developed countries. Students in developing countries quickly will note that their homes were devoid of the characteristics of the literate environment noted earlier. A close observation indicates that there are significant differences between the home and societal environments of the developing and developed nations. For example, homes in less developed countries rarely have a variety of books, magazines, newspapers, and encyclopedias available for functional, developmental and recreational reading. Even in the homes of the upper socioeconomic classes, the paucity of reading materials in the developing world still poses a problem. The few affluent homes that have literate materials obtain them from the United States, Western Europe, and Canada.

Since English in developing countries is often spoken as a second language mainly in schools and the workplace (Melendez, 1989), most of the parents of developing world students do not have the literacy skills to read for themselves and to their children (Nweke, 1987). Further complicating the literacy situation in the developing world is the absence of adequate lighting and space for quiet, sustained, silent reading in some homes. The assignment of regular house chores before and after school further diminishes the availability of time for reading. Additionally, in contrast with the actions of families in literate homes, less developed world students are discouraged from interacting verbally with adults (KaiKai & KaiKai, 1990).

Several other factors in most less developed societies impede reading and the development of literacy skills. The prevalence of several languages inhibits the early mastery of any one particular language. Typically, the number of languages and dialects spoken in the developing world ranges from one to hundreds (Nweke, 1987). Literacy is restricted by the limited number of libraries. The lack of adequate private and public financial support for establishing and maintaining libraries limits the availability of reading materials, as does the paucity of publishing companies. In the developing world, the few existing libraries are located in the urban centers far out of the reach of the majority of the population.

TABLE 1
Environmental Differences Between the Developing and Developed World

Developing World Students	Developed World Students
Home Environment	
English, French, and Spanish are secondary languages.	English, French, German, Spanish, Japanese, and Chinese (Taiwan) are primary languages.
Books rarely available	Books readily available
Magazines and newspapers rarely available	Magazines and newspapers available
Telephone, TV, and radio rarely available	Telephone, TV, and radio available
Inadequate lighting for reading	Adequate lighting for reading
Inadequate space for quiet, sustained silent reading	Adequate space for quiet, sustained silent reading
Assignment of regular household chores before and after school	Freedom from routine or regular household chores before and after school
Minimal parent/adult interaction with children	Maximum parent/adult interaction with children
Low literacy levels of parent/caretaker	High literacy levels of parent/caretaker
Inadequate financial resources to support reading	Adequate financial resources to support reading
Societal Factors	
Multilingual society (numerous languages)	Monolingual or oligolingual society (one or few languages)
Insignificant public financial support for reading	Significant public financial support for reading
Few, if any, professional reading organizations	Many professional reading organizations
Little or no private support for reading	Significant private support for reading
Few national publishing companies	Numerous national and international publishing companies
Inadequate and in most instances nonexistent copyright laws to encourage and protect authorship	Strict copyright laws to protect authorship
Few public and private libraries	Numerous public and private libraries
Peer pressure to read and demonstrate literacy skills	Peer pressure to participate in social and nonliteracy activities
Population centered in rural areas	Population centered in urban areas
Inadequate public transportation	Adequate public transportation
Scarcity and governmental control of information	Wealth of and uncontrolled information
Low per capita income	High per capita income
Few reading specialists/ clinicians available to assist students with reading disabilities	Many reading specialists/ clinicians available to assist students with reading disabilities

TABLE 1 *(continued)*

Societal Factors	
Low tolerance for students with diverse reading abilities	High tolerance for students with diverse reading abilities
Public libraries inaccessible with inadequate public transportation	Public libraries accessible with adequate public transportation

Source: S.M. KaiKai and R.E. KaiKai. (1992). *Understanding the International Student* (pp. 69–71). New York: McGraw-Hill.

Another reason for the limited amount of reading materials available for private and public libraries is the lack of nationally and regionally published materials. In assessing the underdeveloped publishing infrastructure in Africa, Callaway (1984) notes that regional production of books is not sufficient to meet the needs of the reading population. Even with imports from the developed countries, only a quarter of the publishing need is satisfied. Callaway further indicates that although the developing countries represent 70% of the world's population, they produce less than 20% of the world's books. The remaining 80% are produced by the developed nations, which constitute 30% of the world's population.

Publishing in the developing world is restricted because of the excessive cost of importing the materials needed to publish newspapers, journals, books, and texts. The high cost of publishing has made the price of published materials prohibitive for the population in these countries. Since most of the materials are published outside the less developed world, there is a conspicuous absence of texts with appropriate cultural content. Compounding these problems is the nonexistent or inadequate copyright laws to encourage and protect authorship.

An additional societal factor that impedes the promotion of reading and literacy skills is the limited number of professional reading organizations. Without the influence of these organizations, the motivating stimulus needed to provide a forum for disseminating ideas, through conferences, workshops, seminars, and journals is missing. The lack of such associations inhibits the undertaking of research for publication and presentation at professional meetings.

Not only is there a limited number of professional reading organizations in the developing world, but also there is a dire shortage of professionally trained reading specialists and clinicians. These professionals could be useful in diagnosing and remediating reading problems of the corrective and remedial readers and slow learners. The scarcity of these reading personnel forces schools to gear instruction to the superior and normal readers, causing frustration and the eventual dismissal of disabled readers from the school systems.

ACHIEVING SUCCESS

In summary, if we accept the statements that (1) literate home and societal environments are essential for success in learning to read and developing literacy skills; and (2) most less developed countries are severely limited in the environmental factors that stimulate reading success; then what accounts for the success of the developing world students in reading and academic endeavors? Several factors account for achieving academic and reading success in the less developed world. Paramount among these factors is the societal value system that recognizes that educational accomplishment is more significant than achievement in athletic endeavors and any other activities. Academically oriented students are not belittled because of their innate or acquired scholastic intelligence. To the contrary, they are admired, respected, and emulated. It is a badge of honor to be well read and literate. Japan, Germany, France, and Great Britain are examples of developed world countries that also honor academics.

In addition, developing world students receive significant support in reading from their immediate and extended family members. Numerous financial sacrifices are made by families in the less developed world to pay for students' school fees, buy books, and provide a reasonable home environment that maximizes reading and educational opportunities. These sacrifices are perceived as strong motivation for reading and academic success by the developing world students.

In most developing or third world families, going to school is an honor and a privilege, not a right. The result is tremendous peer and family pressure to succeed academically. The benefits gained from a good education are usually manifested in high profile and financially rewarding government jobs. Vocational and technical jobs are neither paid well nor accorded any high degree of societal respect. Again, in this instance, Japan, Germany, France, and Great Britain are developed world countries that act similarly to the developing nations (Combs, 1985; Nester, 1990; Richie, 1987).

Unfortunately, the developing world is highly selective and competitive. A natural selection process caters to the most intellectually able students. This process eliminates the minimally prepared and less gifted students, leaving the few most highly motivated and intelligent students to experience and complete the educational requirements. This process continues to exist because of the inadequate number of reading professionals and clinicians in education. In essence, the schools are basically designed for the academic elite.

DISCUSSION

Teachers, students, and parents in the developed world do not want an educational system that is designed for and geared to only the academically elite. Nor should they desire a school system that benefits only students from literate home and societal environments, as numerous studies have shown. The comparative analysis shown in Table 1 gives the reader some food for thought. Several implications and suggestions emerge from the analysis of the factors that influence reading and academic success in the developed and developing world. These suggestions are presented in an effort to improve some aspects of education in the developed world.

First, it is significant to note that the will to read and succeed transcends the availability of immaculate school buildings and libraries. Indeed, although an appropriate and effective educational infrastructure is a sine qua non, the unusual success of the developing world students in overcoming significant environmental obstacles could be used to inspire poor and less affluent students. There are many students in rural areas of the developed nations who live in environments similar to third world conditions. The endeavors and struggles of developing world students can highlight some of the positive aspects of other cultures and motivate individuals.

Second, students can be introduced to stories and information highlighting the strength and determination of individuals from developing nations. This can enhance the value and significance of multicultural awareness. Moreover, the developed world can use multicultural education to achieve economic, political, and social stability in a rapidly changing and uncertain global environment. The more individuals know about the developing world, the easier it is to respect, communicate, and trade with other countries and cultures. Learning about other cultures is one inexpensive way to develop empathy, understanding, and background knowledge.

Information about students in developing nations can remind teachers that environmental obstacles can be overcome. But a key ingredient in overcoming environmental obstacles must be parent involvement. Parents are their children's first and most influential teachers. What families and parents do to help children learn and succeed is more important to academic success than their affluence (*What Works,* 1986).

Therefore, teachers need to find more ways to keep parents and families involved in students' education and the life of the schools. Teachers and schools should hold more open houses and special meetings explaining classroom activities to parents and families. Positive and motivating letters and short notes praising student efforts should be sent home to parents regularly.

Parents need to be given specific suggestions, activities, and ways to help their children. Parents can be shown (through modeling) how to read to children in a stimulating, animated fashion.

The comparative analysis reinforces what studies have consistently shown: that parents, families, and extended families can have a most profound influence on students' success and failure. Research has shown that having high expectations and high aspirations for students' success also produces greater achievement. Most parents have high expectations and aspirations for their children. Teachers can capitalize on these by designing classroom programs that praise, reinforce, and promote student success.

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Student, Teacher, And Expert Differences In Identifying Important Content Area Vocabulary

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A primary goal in content area learning is the development of new vocabulary that labels important subject area concepts. Acquisition of this vocabulary is essential as students must know and use these words to demonstrate their understanding of the subject matter. However, opportunities for word learning in content area classrooms are generally limited. With direct instruction rarely provided, students must rely on independent learning strategies, as well as expository text materials, for vocabulary development (Drum & Konopak, 1987; Graves, 1986). In the present study, we sought to examine one aspect of independent learning from text that has received little research attention: students' identification of important content terms.

WORD LEARNING FROM TEXT

Studies examining word learning from expository text have been extensive (Konopak, 1988; Mealey, 1990; Nagy, Herman, & Anderson, 1985; Schatz & Baldwin, 1986; Sternberg, 1987). Given different research designs, they generally have addressed students' knowledge of content words prior to and following text reading. Factors of interest have included the learner (e.g., ability level, degree of prior knowledge) and/or the text (e.g., helpfulness of definitional information).

Because this research has been primarily experimental in nature, words targeted for study usually have been preselected by researchers based on criteria important to the study (e.g., concrete/abstract meanings, high/low frequency). Further, these words have been deliberately highlighted in the instructional text (e.g., Konopak, 1988) and/or provided in the assessment materials (e.g., Nagy, Herman, & Anderson, 1985), thus limiting subjects' demonstrations of learning. In actual expository learning situations, however, content words may not be specially marked, thus leaving identification, and subsequent learning, to student judgment.

In reviewing vocabulary literature, we found no studies that addressed students' identification of important words in expository passages. However, recognizing what words learners, particularly novices, consider important is crucial. C.N. Dixon (1991) found that university professors, classroom teachers, student teachers, and students generated different lists when asked for important words within a content area. She concluded that importance was relative to the degree of topic knowledge represented by each participant group. Such results have instructional implications: If identification of important words varies by individual judgment, then teachers must be aware of, and prepared to address, potential difficulties in student learning. Similarly, Drum and Konopak (1987, p. 78) call for research examining the influence of content domain on vocabulary learning:

> Any content area contains certain concepts, labeled by particular words, and organized in a framework or structure. Logical analyses of conceptual frameworks as realized in domain-specific words need to be developed and empirically tested in novice/expert studies. The results could provide reasonable instructional goals for learners at various stages of word knowledge.

As part of a larger investigation on word learning from text, the present study addressed students' and other participant groups' identification of important content terms in an expository passage. Based on a modification of C.N. Dixon's (1991) informal inquiry, we chose classroom teachers and a content area expert as a basis for comparison. Our primary interest, then, was to examine the similarities and differences in content words chosen by the three groups.

METHOD

Participants

Participants were college undergraduate students, secondary and college teachers, and a content area expert. The undergraduates included 11 college freshmen and sophomores (25% black, 50% female) enrolled in developmental reading courses. They were randomly chosen from a population of 66 developmental reading students whose ACT composite scores ranged from 18 to 21, and whose Nelson-Denny Reading Test (Form E, 1981) scores ranged from 9.0 to 11.9 grade equivalents.

The teachers included 10 secondary teachers and college instructors (20% black, 100% female) attending a state reading conference workshop. All expressed interest in students' vocabulary learning from text. The secondary teachers taught reading/English and social studies courses; the college instructors taught undergraduate/graduate reading courses. The expert was an education professor with expertise in U.S. history, including a university degree and secondary school teaching experience in this content area.

The purpose of selecting these three groups was to compare possible differences in word selection according to the relative degree of content knowledge. That is, beginning college students, with fewer opportunities for in-depth study, would have less knowledge; the expert, who specialized in the subject, would have more knowledge; the educators, all with some relevant undergraduate and/or graduate coursework, would fall between these two groups.

Materials

Instructional materials included a passage, approximately 600 words in length, from a college-level U.S. history textbook intended for beginning survey courses. The passage addressed the division of Europe immediately following World War II, focusing on the conflict between the United States and the Soviet Union. It constituted a complete subsection, including graphics, from a textbook chapter on the Cold War studied in the developmental reading classes.

Specifically, the passage included (a) five text paragraphs, without any typographical cues (e.g., boldface, italics, underlining) for vocabulary importance; (b) one photograph of Truman, Churchill, and Stalin at the Potsdam Conference, with a two-sentence caption identifying the leaders and the purpose of the conference; and (c) one map of Europe indicating Western, Communist, and nonaligned countries, with a two-sentence caption describing the postwar power blocs. Readability was estimated at the college/professional level (Raygor, 1977).

Assessment materials included an identification task for the three groups. Participants were asked to select important content words in the expository text passage.

Procedure

Data were collected over two academic semesters, with procedures varying by each participant group. During the first semester, the history expert was asked to read the passage and select those content area terms that she believed were most important in understanding the topic. Given her extensive topic knowledge, the purpose was to identify an expert's judgment of important words, as well as to create a pool of content words for comparison with other groups.

During the same semester, each of the 11 college students met with a researcher in separate interviews. Each was asked to read the passage silently and to identify the three most important content words in the passage. Then, during the second semester, the secondary teachers and college educators met as a group and were given the same instructions. The purpose for designating three words, rather than an unlimited number, was to focus the teachers' and students' attention on importance.

RESULTS

The responses from the participants were examined by the research team. Results for each group are presented first, followed by a comparison across, between, and within groups. (See Table 1 for word lists.)

History Expert

The history expert chose 19 words as the most important in understanding the passage. Of these, nearly two-thirds were technical words (e.g., *Red Army, Potsdam Conference*) related to the U.S.–Soviet Union conflict, and

TABLE 1
Identification of Important Words

Chosen by history expert, students, and teachers

Iron Curtain

Chosen by history expert and teachers

Cold War

Chosen by history expert and students

reparation
national self-determination
subversive
regime
coalition government
Communism
unification
spheres of influence

Chosen by students and teachers

negotiation
competing spheres of influence
communization
disagreement
self-determination

Chosen by history expert only

dictator
democratic
resurgence
Red Army
zones of occupation
Potsdam Conference
coup
bloc
satellite government

Chosen by students only

liberated
coalition
Soviet domination
postwar Europe
consolidated
American duplicity

Chosen by teachers only

division
conflict
suspicion
invasion
domination

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one-third were general words (e.g., *coup, dictator*) applicable to any conflict situation. Of these 19 words, 2 were also included on the teachers' lists, and 9 were also included on the students' lists. Only 1 word (*Iron Curtain*) was common to all three participant groups.

Teachers

Teachers chose 12 words as the most important in understanding the passage. In terms of frequency, 6 of the 12 words were mentioned once, 4 were mentioned twice, 1 was mentioned three times, and 1 was mentioned four times. Of the 12 words, nearly three-quarters were general words (e.g., *invasion, domination*) that concerned the broad topic of conflict. Only 1 word (*Cold War*) was mentioned by just the teachers and the expert, but 5 words were mentioned by the teachers and the students only.

College developmental reading students

Students chose 20 words as the most important in understanding the passage. In terms of frequency, 9 of the 20 words were mentioned once, 10 were mentioned twice, and 1 was mentioned three times. Of the 20 words, nearly half were technical words (e.g., *postwar Europe, communization*), and half were general words (e.g., *disagreement, consolidated*). Of the 9 words also included on the history expert's list, 3 words (*coalition governments, spheres of influence, and national self-determination*) were listed with slight variations (*coalition, competing spheres of influence, and self-determination*).

DISCUSSION

Limitations of this study include the small sample and the single text passage and content area. In addition, the degree of prior knowledge for each participant group was not formally assessed. However, given these limitations, the findings show that the history expert, classroom teachers, and developmental reading students generally did not agree on their identification of important content words.

The results suggest that, similar to C.N. Dixon's (1991) findings, experts and novices have different views of word importance. The history expert chose mainly content-specific terms, teachers selected mainly general words, and students chose a combination of the two. These differences appear to be attributable to differences in prior knowledge. The history expert selected mainly content-specific terms that are a collocation for that topic and tend to occur together repeatedly. As Bolinger and Sears (1981, p. 250) stated, "Whenever a combination of words comes to be used again and again in reference to a particular thing or situation, it develops a kind of connective tissue." Earlier, Miller (1978, p. 53) explained, "The meaning of any word depends on how it works together with other words in the same lexical field to cover or represent the conceptual field." According to Calfee and Curley

(1984), the technical terms chosen by an expert or textbook author are determined by their subject matter. These include the technical terminology, words specific to a subject such as *photosynthesis*, *legislature*, and *noun*. Writing to a topic makes its own requirements on word selection. It is this knowledge and the use of this terminology that distinguishes the expert from the novice.

The students in this study did not have enough prior knowledge about the Cold War to recognize the "connective tissue" of words important to that topic. Students often have difficulties understanding content text because they lack the vocabulary necessary to support comprehension. As a result, they do not identify as important all the related technical terms in text. They learn vocabulary as isolated units rather than as a cohesive structure. Moreover, college developmental readers do not typically have well-developed general vocabularies, hindering even a basic understanding of the text. Thus, the students' near-equal selection of both content and general terms as important makes sense.

If learning new words that represent new concepts is "the most difficult word-learning task students face" (Graves, 1987, p. 169), identifying and teaching these words is equally difficult for teachers to accomplish. The teachers selected more general than content-specific words, which represented the thrust of the passage. It may be that they focused more on identifying important rather than important and unfamiliar words, as the students appeared to do.

These differences in identifying important vocabulary raise an important question for practice: If different individuals or groups identify different words as important to know in the same content area text, what words should teachers focus on in class? Emphasizing the words that students or teachers believe are important may not do justice to the topic; solely emphasizing the words chosen by experts may not be meaningful to students.

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RESEARCH AND PRACTICE IN ADULT LITERACY

Preparing Literacy Teachers: Elements of an Effective Training Model

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Illiteracy is a large and rapidly growing problem in this country. Although the percentage of adults who are classified as illiterate varies with the criteria used to determine it, too many adult Americans are unable to function as competent members of our society because of a lack of literacy skills.

A hodgepodge of programs has appeared to attempt to alleviate this problem. The agencies addressing literacy needs range from civic and community organizations to governmental agencies including employment programs for large and small corporations. What most of these programs lack is a coordinated approach to training teachers and tutors (Campbell & Sechler, 1987).

Unlike certification requirements necessary to teach youth in our schools, neither a college degree nor preservice preparation is mandatory for teaching adults in these programs. Consequently, many literacy teachers and tutors receive little effective preservice preparation. The literature suggests that they may receive as few as 20 hours of training prior to beginning to remediate serious learning problems that are usually accompanied by emotional involvement (Grabowski, 1981; Jorgenson, 1988; Kowalski, 1984; Lindsay, 1984; Meyer, 1985).

Workers in literacy programs need to learn methods and techniques to help adult learners succeed. This paper presents a model for training teachers and tutors in literacy programs. This model includes four elements:

1. Awareness of self.
2. Awareness of the learner.
3. Collaborative planning and effective teaching.
4. Application and reflection.

The model is being used in a literacy teacher-training program that includes volunteer tutors, literacy teachers, and adult educators participating in a series of literacy workshops offered by an urban university. The program, developed through funding by a major corporation, now will be discussed.

AWARENESS OF SELF

"First know thyself" is one of the important commandments in literacy training. These mostly volunteer teachers need to understand their expectations of adult learners and their ability to work with individuals for whom learning may prove difficult. Personality factors crucial for successful tutoring include enthusiasm, responsiveness to the learner's needs, creativity, self-confidence, and the informality necessary in developing cooperative teaching and learning. Table 1 presents a set of open-ended questions found useful in helping individuals learn about their own beliefs and practices.

Additional information useful for self-analysis can be gained from the Principles of Adult Learning Scale (Conti, 1985). This scale assesses teaching style and allows literacy workers to evaluate themselves on seven subscales. Both instruments are used in the training sessions to help literacy workers understand their own motives. Once the prospective teachers have examined their personal beliefs and values, they need to gain an understanding of the learners.

AWARENESS OF THE LEARNER

The second phase of the model proposes that prospective literacy teachers be aware of adult learners' educational needs, learning styles, and cultural and social backgrounds. Personal interviews, discussions, and inventories can be used to establish learning goals, identify learning problems, and promote learner interests. The Adult Interest Inventory (Heathington & Koskinen, 1982) and the Perceptual Learning Styles Inventory (James & Galbraith, 1985) have proven useful along with informal discussions in helping teachers and learners establish realistic goals and adapt teaching to different learning styles.

Literacy workers need to understand that adults learn differently from children. The following characteristics appear to be unique to adult learners: (a) they are taking personal risks because they must expose their own learning deficiencies, making them personally vulnerable; (b) they are self-directing, task oriented and possess extensive life experiences; (c) they guard their self-esteem; (d) they are often motivated by external pressures

TABLE 1
Self Analysis Questions

1. Why do you want to be a literacy teacher?
2. What can you offer a student?
3. What do you want to accomplish as a result of working with this student?
4. What would you characterize as your teaching strength? Why?
5. What would you characterize as your teaching weakness? Why?
6. Does it matter that your student may not share your same ethnic background, values, or beliefs?
7. Do you believe that an adult student has the right to decide which instructional goals, approaches, and materials are right for him or her? Why?
8. Do you believe that when you make the effort to set up and maintain a learning environment or schedule that adult students should be grateful? Why?
9. Do you believe that adult students have not been successful in previous learning activities because they were incompetent? Why?
10. What is your philosophy of learning and/or teaching?
11. Would you be willing to use materials that the adult student wants to use even if they are not on the original lesson plan?
12. How would you respond to the statement: Many adult students do not succeed because they are lazy, undependable, and do not want to better themselves.

related to their roles as workers, parents, spouses, and citizens; (e) they are deeply affected by past learning failures and successes and need to be made continuously aware of their learning progress; (f) generally, they are voluntary participants and need to be allowed to decide their own learning goals and activities; and (g) they learn best in cooperative learning environments in which pressure and competition are minimized. The research literature (Jorgenson, 1988; Knowles, 1970; Lamorella, Tracy, Haas, & Murphy, 1983; Yonge, 1985) suggests that awareness of these adult learning characteristics is especially critical in literacy programs, perhaps more important than instructional methods. When teachers understand themselves and their students, they can more effectively plan instruction.

COLLABORATIVE PLANNING AND EFFECTIVE TEACHING

Collaborative planning and effective teaching involve mutual decision making in selecting learning activities. Teachers may make judgments about the best approaches, materials, and environments for learning, but the adult learners must be allowed to collaborate in making educational decisions. Adult learners are usually very concerned about the purposes, expectations, roles, and content of their learning activities.

Because literacy teachers really just serve as learning facilitators, they can maximize learning experiences by helping adult learners understand not only their own learning needs and learning styles but also why past learning experiences were not successful. Effective teaching for adults focuses on problem solving. Teaching approaches that consistently succeed with adult learners include group discussions, role playing, skill practice exercises, demonstrations, field projects, action projects, case studies, and examination of real-life situations (Davenport & Davenport, 1985).

Using actual situations that literacy teachers have encountered, teachers-in-training can review common problems of teachers and their adult students. The following is one example that is used in the training sessions.

The Situation

Joe Jones, a high school biology teacher who works very hard, decides to serve as a literacy teacher. He believes that he can offer a less fortunate person an opportunity to learn how to read. He is a concerned citizen. Joe participated in tutor-training classes that focused on teaching reading by using a series of instructional books that focus on using phonics skills to teach reading.

John Smith, an adult student assigned to work with Joe, lives in subsidized housing, receives public financial assistance, and wants to learn to read and write better so that he can complain to the government about his living conditions and financial support. John wants to read pamphlets and newsletters from tenant associations and grass-roots organizations that focus on changing the living conditions of the oppressed.

The Problem

John constantly talks about how government is responsible for the poor and oppressed during their sessions. He brings reading materials to the session that reflect his views. Joe does not agree. He believes that people ought to work for a living and not depend on the government and his tax dollars to take care of them. Joe urges John to go to the local library and read books and articles on getting jobs and self-improvement. He continues to use the instructional booklets he received during his training. Joe and John are not making progress.

The conflict in the above situation stems from (a) a different value system between the teacher and adult student that does not allow for compromise, (b) the teacher having a predetermined agenda for what the adult student should learn and materials that should be used, (c) both teacher and student not establishing learning goals and the means to reach those goals, (d) the teacher's lack of understanding of the real-world needs of the adult learner, and (e) the adult learner expecting the teacher to understand the issues that are imperative to him. In analyzing the problem, its causes, and possible solutions in situations like the one above, literacy teachers practice much needed decision making in teaching/learning interactions.

Reading instruction is the core of most literacy programs, and helping adult learners succeed in reading is a major challenge for most literacy teachers (Padak, Davidson, & Padak, 1990). Effective literacy teachers understand that learning to read is a complex process. They use different models for teaching reading, are aware of the sequences for teaching reading skills, and recognize that no single approach to reading instruction is appropriate for all adult learners. Effective literacy programs feature variety, including whole language, comprehension-based instruction, language experiences, and direct instruction in word analysis abilities (Karmos & Greathouse, 1989; Malicky & Norman, 1989; Richardson & Harbour, 1986; Rosenthal, 1987).

During the training sessions, participants are introduced to a number of reading strategies, approaches, and instructional plans. One of the most successful instructional plans (Meyer, Keefe, & Bauer, 1986) in preparing literacy tutors and teachers to teach reading promotes the following components: (a) focusing on getting meaning, not correct pronunciations when teaching adults to read; (b) teaching learners that reading purposefully means sampling, predicting, and confirming what is read; (c) choosing interesting materials that reflect the background experiences of the learner; and (d) helping learners use metacognitive strategies to gain meaning from their reading. This plan is promoted because it focuses on reading for meaning, not just decoding words.

Another effective instructional plan focuses on initial informal assessment followed by discussions of reading needs. The subsequent instructional activities combine reading and writing activities along with shared oral reading (Thistlethwaite, 1986). As adult students and teachers exchange ideas, they realize that both are working toward the same outcome: helping adult learners achieve their literacy goals.

Both instructional plans allow for collaborative planning, literacy growth, and shared learning experiences. Effective planning and teaching allow success for both teacher and learner.

APPLICATION AND REFLECTION

The final phase of the model proposes time for applying what has been learned and reflecting on the new skills and knowledge that the learner has acquired. *Application* refers to learners using their acquired literacy skills in a variety of social and cultural contexts and in their daily roles as workers, consumers, parents, spouses, and citizens. The literacy teacher needs to evaluate the instructional practices, learning outcomes, and changing needs along with the learner. When initial learning outcomes are achieved, opportunities must be provided for continued success. When outcomes are negative, both teacher and student need to determine where changes can be made in the learning environment, instructional delivery, application, or materials (McKinley, 1983).

At the end of each instructional session, teachers and students should summarize what worked and why. As participants continue to work with their adult learners, they are asked to reflect on these teacher-learner exchanges. According to Erdman (1987, p. 18), "One learns to know through exploration—through practice coupled with reflection. Reflection consists of examining, criticizing, reformulating, and testing intuitive understanding of teaching situations."

SUMMARY

By examining the preparation of literacy teachers from the perspectives of this model (self-awareness, learner awareness, collaborative planning and teaching, and application and reflection), literacy programs can work toward addressing the growing and diverse literacy needs of adults and the teachers who work with them. Teachers' comments and evaluations of the training program using the elements in this model reveal its effectiveness in helping them meet the diverse needs of their adult literacy students. Follow-ups are being conducted to determine on-going effectiveness of using this staff development training model in working with literacy workers and subsequently with adult learners.

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A Nonacademic Adult Writer's Workshop

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There seems to be sufficient literature to establish that many prospective writers have difficulty writing (Graves, 1983; Murray, 1987). Most of this research was developed with children and academic adult subjects (Atwell, 1987; Shaughnessy, 1977). However, adult writing is a relatively unexplored concept in nonacademic settings. Many reading teachers employ Calkins' (1986) ideas about writing in their classes and are always looking for new ways to improve student writing. Therefore, it is not unusual when a reading teacher/researcher associates with adult writers in nonacademic settings. Thus, in an attempt to better understand the relationship between nonacademic adults and their writing, this teacher/researcher studied nonacademic adults and their writing in a collaborative, oral history narrative writers' workshop.

This paper is divided into several parts. First, I describe the background, participants and structure of the workshop. Second, I explain the data collection, organization, and analysis process for the study. Third, I explore the findings of the study and conclude the article with a discussion and suggestions for further study of nonacademic adult writers.

BACKGROUND

I joined a writing club in a small town of about two thousand in a large southwestern state in the winter of 1989 to talk about writing. The club held meetings at night twice a month, but the members evidently did not spend much time actually writing or discussing writing. Instead, most of the meetings were devoted to social and financial matters. These circumstances did not please all members, including the chairperson. Consequently, the chairperson asked me to hold a "few free Saturday workshops," which lead to this study in the spring of 1990.

PARTICIPANTS

The following nonacademic adults participated in the study during eight consecutive Saturday morning sessions held around card tables in the back room of a local community paperback book store.

Harold, 61—retired oil field dispatcher.
Helen, 54—woman's prison night guard.
Bob, 51—brick yard mechanic.
Gene, 49—stone plant heavy equipment operator.
Maude, 47—homemaker married to Gene.
Claudia, 46—part-time librarian.
Louise, 44—homemaker married to Jack.
Jack, 44—stone plant driller.
Rose, 39—bank secretary.
Mike, 37—brick yard night guard.
Dutch, 36—plumber for the city.

The participants attended at their discretion, and all except Claudia, who dropped out after two workshop meetings because the library called her back to work, attended the eight sessions.

THE WORKSHOP

In structuring the workshop, I relied on a methodology grounded in one tape-recorded oral history, collaborative writers' workshop model suggested by a trio of writer/educators (Calkins, 1986; Ives, 1987; Wigginton, 1987). Keeping in mind that I always "suggested" rather than "required" and that the workshop events seldom followed the planned structure, the circumstances can be generalized as follows.

I spent the first meeting selling the class on the idea of interviewing and tape-recording a "real-life" experience of someone in the community and then writing a story based upon that interview. The participants agreed to interview a citizen of the community and use respondent information to produce a rough draft of a story for the next meeting. The following are examples of other items discussed: how to find a respondent, how to use a tape recorder, and how to protect respondent confidentiality. In addition, the participants agreed not to use the respondent's real name. We brainstormed questions to ask the respondents and steps to take in beginning the story after the interview. The participants decided to listen to their tapes several times rather than make a transcript. The following examples characterize the interviews. Claude interviewed a nursing home resident about the area's turn-of-the-century coal industry. Helen interviewed a local resident about how to bake a "special" type of cake.

The class brought rough drafts to the second meeting and read them aloud to the group. Then I asked for unsigned written comments about these drafts from the others in attendance. The comments were given to the participants to do with as they wished. I never saw these comments.

In the third meeting, I formed the class into groups of three and four to work together (Comstock, 1982). I asked them to read their drafts aloud to their group, allow others to offer vocal constructive criticism, and rotate opportunities to read and receive feedback. The participants agreed to bring another draft to the next meeting.

Meetings four, five, and six were devoted to additional editing. At my suggestion, class members agreed to edit by sharing their drafts with participants who were not members of their original groups. When a participant could not solve a writing problem, I collaborated with the class member to "fix" the problem together (Murray, 1985) by talking with the person about what he or she thought was wrong. I did not hesitate to suggest solutions, but I always left any final decision with the participant. I tried to help each individual see problems in the draft, especially concentrating on how it flowed and made sense in terms of chronological order. Most of the participants edited their draft three times during this set of meetings.

By the seventh meeting, I believed that the participants had edited their stories as much as possible, short of "major surgery," and suggested that once the participants had written a "last" copy, it would be ready to share with someone outside the workshop. The class seemed to be glad to hear this and left with the intentions of returning a week later with their best effort. I told the participants that even though their best could be improved, they had done all that was asked of them in the allowed time.

The last meeting was used to polish the participants' final draft, a last reading for typos and other obvious mistakes. They brought copies, passed them around to others, and talked about the future path of their stories. Dutch intended to submit his story to the county newspaper for possible publication in a community interest column. Mike intended to share his river trip story with a Boy Scouts' magazine.

WORKING WITH THE DATA

I reflected on what the workshop events meant for these adults and their writing during and after the workshop. The following is a limited discussion of the steps taken when working with the data. I recorded field notes to capture the events in the workshop and kept a notebook close at hand, listing key words and phrases (Spradley, 1979) thought to be helpful when later writing field notes. I also subjectively acknowledged that categories do not exist in vacuum and proceeded to use a three-step inductive process (Glaser

& Strauss, 1967) to analyze and triangulate the data. I read the data several times, searching in particular for what adults had to say about themselves and their writing. Then I made rough personal notes pursuing categories. Second, I used mapping techniques to internalize existing categories. Third, I employed clustering and connections to refine the emerging categories (Jones, 1985).

I triangulated the data with the adult participants by mailing printed copies of the field notes to two participants chosen at random by an uninterested third party. I asked the two participants to read, make corrections or amplifications, and return. The two participants returned the field notes and I added their input to the data. Thus, the data were examined from two nonacademic adults' perspectives, and each commented after the study on the analysis and findings. This process captured a more complete, holistic, and contextual picture of the study (Jick, 1979).

FINDINGS

The following six dominant themes emerged during my analysis of the data that might be useful to writing teachers and others interested in nonacademic adults and their writing.

1. Nonacademic adults have preconceived notions about themselves as writers. Many do not see themselves as effective writers. For example, one self-described nonwriter, Helen, brought to the workshop adverse concepts about herself as a writer. However, her interaction with others seems to have had a metamorphosis effect on her feelings and attitudes toward herself as a writer. It seems that attending the workshop gave her an opportunity to change her views: "I write grocery lists, but a writer? No, I've not seen my writing in print. I don't have the guts to try to get published." The fact that Helen even attended the workshop suggests she may have entertained thoughts of someday becoming a more effective writer. Perhaps beforehand, writing for her was more effort than she was willing to accommodate. Yet during the workshop, she composed a narrative for others to read. Conceivably, Helen found enough enjoyment in sharing her writing to change her views about herself as a writer.

2. Nonacademics understand that their feelings play the determinate role in differentiating effective and noneffective writing. For example, to Louise, writing with feeling produced more effective writing. "If it does not have my feelings in it, then to me, it's not 'real writing.'" Although she tried to write with feeling, she did have trouble transferring meaning to others. Because Louise directed her first draft toward herself, parts of it were understood only by herself. Rose told her that she didn't understand what she was trying to say with her writing. However, with Rose's help, Louise's story evolved during editing sessions to the point where Rose better understood. It seems that Louise's understanding played a positive role in her realization that meaning in writing is as important as content. The workshop did not change

her notions about feelings, yet she realized that she could turn feelings into more effective writing through the editing process by discussing her feelings with others.

3. Nonacademic adults' writing knowledge is influenced by what is remembered from past writing instruction. For example, Gene asked the same questions as many college students, "How long does this have to be? How many drafts will I have to make before I'm through?" Gene replied to a question about forgetting what he learned in school, "What I remember about writing in school is so ingrained it would be difficult to forget." This suggests that past writing instruction plays a determinate role in how adults write. It also suggests that adults have a hard time forgetting prior knowledge about writing.

4. Nonacademic adults have limited knowledge of the editing process. For example, Jack understood writing as a one-time process. He understood his writing process as either correct or incorrect. He did not have much knowledge of editing as a process to improve writing. It seems that Jack saw only extremes on the writing continuum—"right" at one extremity and "wrong" at the other. "I try to write right, but doubt I'm always right. I was taught in school there is a right and a wrong way to write. It's either right or it's wrong. It's that simple." This suggests Jack came to the workshop thinking writing is a one-time process. There is no doubt that editing sessions in the workshop changed Jack's understanding about the importance of revision and editing.

5. Nonacademic adults become more aware of what they write because other writers could see their writing. For example, for some like Bob, effective writing became a challenge. But for others, like Maude, peer suggestions were not taken as fact. The result was that each participant had to carry his or her own weight in each group because the other participants demanded that they do so. Participant interaction brought to the surface a sense of pride and accomplishment in writing. It seems that the collaborative editing process was responsible for extending participant knowledge about writing.

CONCLUSIONS

The findings of this nonacademic adult writer's workshop offers several suggestions to help reading students become more effective writers. First, in collaborative workshops, writers learn from others regardless of context or expertise. Second, the rational, meaningful, and positive practice of writing through collaborative editing sessions increases writing competence. Third, writers learn different ways to transfer text meaning from others. Fourth, effective writers rise to the challenge and help the less effective writers. Fifth, personal ownership in writing rises to more effective levels when writers are allowed to share their knowledge. Sixth, interest in learning new ways of writing should not be restrained by contextual boundaries. Seventh, peers who applaud and positively reinforce writing will enhance others in becoming more successful writers.

In conclusion, there seems to be much that remains to be done in the study of nonacademic adult writing. Continuing study of adults allows researchers to learn additional ways to affect future writing instruction at the academic and nonacademic levels. In this context, then, the following recommendations for future study seem appropriate.

1. Inquiry is needed into reasons more people do not write for pleasure, join writing clubs, or collaborate with other writers to improve their writing.

2. Inquiry into adult remembrances about academic writing instruction is needed. Results of such inquiries may reflect the status of students' current learning methods and orientations and may lead to further improvement of writing instruction.

3. Further inquiry is needed into the nature of and interactions between members of nonacademic writing clubs. The same academic research procedures could be used to study nonacademic writers.

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Undereducated Adults: Retrospections of Childhood Homes and Reports of Present Practice

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For several decades, we have known that large numbers of undereducated adults diminish the nation's ability to compete in an intensely competitive global market place. In light of this knowledge, we have designed and implemented a great variety of programs addressing the literacy needs of adults. Each program acts as a fulcrum, or support, on which the lever of educational achievement rests. Low literacy is on one end of the lever, high literacy on the other. The challenge, of course, is to position literacy programs correctly so that the lever might work effectively. This calls for understanding the antecedents of poor reading achievement and school failure.

Growing up in a poor family is unquestionably a powerful indicator of difficulty in school, low achievement, and reading failure. Yet poverty is not the lone antecedent of failure. Belonging to a racial or ethnic minority group, living with a single parent, growing up in a dysfunctional family, having undereducated parents, or using language that is not congruent with language that is used for learning in school are also considered primary indicators of risk in our society. Although important, these primary risk indicators concentrate on sociodemographic variables and, with the exception of language, do not consider factors related to learning conditions within homes, communities, and schools.

In addition to language competence, complex interactions within family, social community, and school settings may affect success in school, and therefore may also be considered antecedents of illiteracy. Individuals may be at risk if (a) differences exist in social interaction patterns at home and school, (b) children grow up placing a low value on literacy, (c) limited early literacy experiences are available in families, (d) there is a lack of sufficient parental support for learning activities, and (e) children have inappropriate literacy instruction at school (Fox, 1990). Thus, the beliefs, behaviors, and knowledge children internalize may affect their orientation to learning to read and receptivity to schooling.

This paper focuses on undereducated adults' retrospective reports of childhood opportunities to (a) observe the value of literacy, (b) engage in read aloud and book ownership practices, and (c) receive parental support for schooling. Previous research shows that the lack of behaviors and practices associated with these three antecedents is found in the childhood homes of children at risk of school failure. For example, we know that the home and social communities of at-risk children do not necessarily include routine opportunities to observe the value of literacy (Fitzgerald, Speigel, & Cunningham, 1989; Mickelson, 1990; Nichols, 1977). Research also shows positive relationships between reading achievement and reading aloud to children at home (Dioron & Shapiro, 1988; Durkin, 1966; Phillips & McNaughton, 1990; Yaden, Smolkin, & Conlon, 1989) and between reading ability and family support for schooling (Center for Research on Effective Schooling for Disadvantaged Students, 1991; Epstein, 1991; Goldenberg, 1989; Rasinski, 1989; Roberts et al., 1989).

Just as community-based literacy initiatives and intergenerational programs are the fulcrum upon which to leverage literacy learning, so too are family literacy practices an internal fulcrum upon which the literacy of children is increased. To act as a fulcrum, family literacy practices must include human and social capital resources. Coleman (1991) and Coleman and Hoffler (1987) describe human capital as parents' education, knowledge and, skill, and social capital as the relations among individuals that support and nurture development. In this paper, human capital is considered parents' ability to read. Social capital includes reading aloud to children, parental reading habits, parental support for schooling, and the availability of print materials in homes.

METHOD

Subjects

A nine-item questionnaire was constructed to examine the three antecedents of illiteracy in childhood and current homes of the subjects (see Appendix). The design of the instrument is explicitly described by Isaac and Michael (1974), and examples of similar questionnaires used to query adult populations can be found in work by Hansell and Voelkel (1990) and Ross and Smith (1990). Parameters governing construction of the questionnaire included (a) suitability for oral administration, (b) provision for some open-ended questions to elicit multiple response, and (c) a means of consistently recording responses. Accordingly, questions were designed to elicit either a yes/no response or a short answer with follow-up probes to explore positive responses. In cases for which questions might elicit several answers, probable responses, as well as blanks for entering other information, were provided so as to expedite completion.

A pilot instrument was constructed and field-tested on a sample population of adult literacy students. Modifications were made to address parameters. This process was repeated through two iterations. Questions designed to elicit recall of opportunities to observe the value of literacy in childhood homes focus on (a) parental literacy, (b) perceptions of the importance of literacy for parents' occupations, and (c) the presence of literate, admired adults or peers during childhood years. Questions designed to examine early experiences with books, the second antecedent investigated in this study, include recollections of (a) reading storybooks aloud to youngsters and (b) literacy materials available for adults and children in both childhood homes and present families. Questions to determine parent support for schooling include recollections of (a) active support as indicated by help with reading and attending school conferences and (b) passive support by encouraging homework and discussing report cards.

Design and Procedure

Two copies of the questionnaire and directions were mailed to administrators of 30 community-based literacy programs. A letter accompanying the questionnaires explained the purpose of the study and asked administrators to give the forms and directions to volunteer tutors. Tutors then administered the questionnaires orally to individual adult literacy students. Two of the 25 participating community-based programs administered questionnaires to more than two adult literacy students, thereby bringing the total number of completed questionnaires to 84.

Responses to each of the nine questions and to follow-up clusters of related probes were tallied. The chi-square statistic was used to determine the significance of differences in reports of the presence of reading materials in current homes compared with childhood homes.

RESULTS

Results are presented under each of the three antecedents of illiteracy that were considered. Responses were examined for differences by gender and race, and no differences were found. Therefore, results are reported for the group as a whole.

Opportunities to Observe the Value of Literacy

Seventy-one percent of adults (n = 60) reported that they grew up in families in which one or both parents were literate. However, fewer than one-third believed that their parents' jobs required reading. Of the 30% (n = 25) who reported that literacy was important for their parents' occupation, 5% (n = 4) recalled that their mothers' jobs depending on reading, 20% (n = 17) believed that their fathers' employment depended upon reading, and 5% (n = 4) reported that reading was an important part of both parents' jobs. Table 1 shows recollections of literacy practices in childhood homes in which one or both parents were literate. In response to questions asking adults to recall literate adults and peers whom they admired as they were growing up, 69% (n = 58) reported the presence of an adult relative, 49% (n = 41) an adult neighbor, 27% (n = 23) a co-worker of their parents, 26% (n = 22) a friend of their parents, and 5% (n = 4) a school friend. Yet 27% (n = 23) could not recall a single literate adult whom they held in high regard while growing up, and 23% (n = 19) could not recall any literate person—adult or peer—whom they held in high regard.

Early Experiences with Books

Of 60 adults who reported having literate parents, 30% (n = 18) remembered their parents reading storybooks to them when they were young. Twenty-nine percent (n = 24) of the subjects remembered their parents encouraging them to read for pleasure, 12% (n = 10) reported receiving books as gifts, and 10% (n = 8) noted that their parents took them to the library. Of the 39 subjects who were parents themselves, 36% (n = 14) reported that book reading to children was not part of their childhood homes, but 90% (n = 35) indicated that the activity was part of their present home environments. When asked who read to their children, 11 adults said they themselves do the reading, 17 reported that someone else reads, and 7 reported that both they and others, spouse, siblings, and friends, read to their children.

Parental Support for Schooling

In this study, parental support for schooling was considered active if parents were personally involved in helping their children with learning activities, passive if only verbal encouragement was offered. Table 2 shows recollec-

TABLE 1
Recollections of Literacy Practices in Childhood Homes Where Parents Were Literate

Parental Practices	One Parent Literate	Both Parents Literate	Total
Pleasure	47% (28)	38% (23)	85% (51)
Bible	48% (29)	25% (15)	73% (44)
Newspapers	31% (19)	7% (4)	38% (23)
Magazines	13% (8)	7% (4)	20% (12)

tions of childhood homes in which parents actively supported schooling by helping with reading and attending conferences at school and passively supported learning by encouraging homework and discussing report cards. Passive support, the most easily provided support by literate and non-literate parents alike, was more frequently cited than active support, even when the parents of the subjects could read. Retrospections indicate that illiterate parents were seldom actively involved in educational activities. Families in which one or both parents were literate accounted for almost all incidences of active support. Help with reading and attending conferences at school were evenly divided.

DISCUSSION

It should be noted that results of any retrospective, self-report instrument, such as the one used in the present study, must be viewed with caution. The accuracy of recollections of past practices is not subject to contemporary verification, and responses may be influenced by a variety of factors including respondents' perceptions of expected answers, interaction dynamics between those administering and those responding to the instrument, and inaccurate memories. Therefore, results are at best considered a basis on which questions for future research might be generated. Further, results might provide insight into ways in which current practices might be reconceptualized. In short, results suggest a potential lens through which family dynamics might be viewed.

Reports of the presence of literate parents in childhood homes are consistent with previous studies that demonstrated that literacy is part of nonmainstream households (Heath, 1983; Teale, 1986). However, the mere presence of literate parents apparently did not protect against poor reading achievement and school failure for this group of undereducated adults. The results of this study question the interplay between human and social capital in families. It may be that in some families, particularly those in which the

TABLE 2
Reports of Parental Support for Schooling in Childhood Homes (N = 84)

	Active		Passive	
Parental Literacy	Helped Reading	Attended Conferences	Encouraged Homework	Discussed Report Cards
One N = 30	11	9	21	17
Both N = 30	17	13	22	24
Neither N = 24	0	6	17	12

primary risk factors of poverty, minority status, single parenthood, dysfunctional family structure, and undereducated parents exist, the presence of sufficient human capital does not necessarily mean that families have the requisite social capital to support literacy learning at home.

Sharing books with children and pointing out why reading is important in community and workplace settings brings reading into a broad, socio-occupational focus. This, in turn, may foster learning to read and create conditions conducive to forming positive attitudes toward school achievement and reading success. Thus, this study raises the question of whether today's children are more likely to be read to at home regardless of whether their own parents were read to as youngsters. The study also provides a conceptual base upon which further research might be undertaken to investigate the importance of having literate parents in families with differing social dynamics. For example, we know that in families in which a primary risk factor is present, such as parents who do not speak English, children do not uniformly experience school difficulty (Gibson, 1987; Schieffelin & Cochran-Smith, 1984). Perhaps by focusing on specific, identifiable antecedents such as those that are the focus of this paper, researchers will have a conceptual platform from which to investigate systematically the dynamics of today's families.

From reports of the adult subjects, it might be inferred that today's parents do not always emulate the behavior and practices of their childhood homes, but instead provide qualitatively more beneficial opportunities to nurture literacy in their own families. Parents' willingness to nurture literacy and the value ascribed to literacy in families and social communities ultimately may outweigh parents' own reading ability as the fulcrum upon which the lever rests to move families from a cycle of low literacy and poor school achievement to proficient reading and school success. If family social dynamics are important for nurturing literacy, then entire family units, not just individuals, must be supported.

We suggest that the next iteration of programs aimed at breaking the cycle of low literacy across generations strengthen family practices that support literacy. In addition to improving adult reading ability and teaching parents how to read to their children, program planners might consider providing explicit reasons why parents should take seriously their positions as literacy role models for their children and why it is important to show children ways in which reading contributes to community activities and occupational goals. Programmatic features might include such components as locating esteemed, literate adults in communities, providing opportunities for children to visit workplaces in which literacy is crucial for success, assuring that literacy materials are available to children in homes, and assisting parents in finding jobs that require reading. Programs that focus on the entire family unit would place literacy in a broad socio-occupational context by offering services to all in the family unit: parents, in-school and out-of-school children, grandparents, and others, at whatever level of education, health, income, or employment might exist. Should the antecedents discussed in this paper prove, upon further investigation, to be significant contributors to in-school learning, then education in general and literacy education in particular may ultimately be called on to deliver high-quality programs in the large social arena.

APPENDIX. LITERACY QUESTIONNAIRE

Today's Date: ____________ City & State: ____________________________

This questionnaire is to find out about adults' perceptions of their experiences with reading in their homes when they were growing up and in their homes now. Please read the numbered questions to adults with whom you work. Ask each question and then follow up with the remaining parts as needed. Sometimes a list of possible answers is given for your convenience. Unless told otherwise, please don't read the list, just circle the answers given.

Age of Student: _________ Sex: M F Race: White Black Other

1. "When you were growing up, did your mother read?" YES NO

IF YES,

"Did she have a job that required reading?" YES NO

"Did she read for pleasure?" YES NO

IF YES,

"What did she read for pleasure?"

Books; Magazines; Newspapers; Bible,

Other ______________________________

"Did she read because she needed to?" YES NO

IF YES,

"What did she read because she needed to?"

Bills; Recipes; Shopping Lists; Instructions;

Other ______________________________

2. "Did your father read?" YES NO

IF YES,

"Did he have a job that required reading?" YES NO

"Did he read for pleasure?" YES NO

IF YES,

"What did he read for pleasure?"

Books; Magazines; Newspapers; Bible,

Other ______________________________

"Did he read because he needed to?" YES NO

IF YES,

"What did he read because he needed to?"

Bills, Instructions to Fix/Make Things,

Other ____________________

3. "Did anyone read to you when you were little?" YES NO

IF YES,

"Who read to you when you were little?"

____

4. "Do you remember any of these people being readers?"

A favorite relative	YES	NO
A friend of your parents you admired	YES	NO
School or neighborhood friends you looked up to	YES	NO
An adult neighbor you admired	YES	NO
A person you admired that one of your parents worked with	YES	NO

5. "Tell me if any of the things I list were in your home."

(PLEASE READ THE LIST AND CIRCLE "YES" ANSWERS.)

Books for Children; Bible, Books for Adults; Maps; Newspapers; Magazines; Dictionary; Crayons; Markers; Coloring Books; Paint & Brushes; Pencils & Paper; Alphabet Letters; Records/Tapes with Stories.

6. "Do you remember your parents doing any of the following?"

Going to PTA meetings	YES	NO
Going to parent–teacher conferences	YES	NO
Helping you with homework	YES	NO
Helping you learn words for reading	YES	NO
Helping you understand your textbooks	YES	NO
Talking with you about your report card	YES	NO
Encouraging you to read books for fun	YES	NO
Taking you to the library	YES	NO
Giving you books as presents	YES	NO

7. "Does anyone else in your family have trouble with reading?" YES NO

IF YES,

"Who?" ____________________

8. "Do you have young children at home?" YES NO

FOR OLDER ADULTS, ASK

"Are you a grandparent?" YES NO

IF YES,

"Do you read books to your children/grandchildren?" YES NO

IF YES,

"What kinds of things do you read?"

____

IF NO,

"Does anyone else read to them?" YES NO

"Who reads to them?"________________________

9. "Here are some things that might be in your home. Are they?" (PLEASE READ LIST AND CIRCLE ANY "YES" ANSWERS.)
Books for Children; *Bible*; *Books for Adults*; *Maps*; *Newspapers*; *Magazines*; *Dictionary*; *Crayons*; *Markers*; *Coloring Books*; *Paint & Brushes*; *Pencils & Paper*; *Alphabet Letters*; *Records/Tapes with Stories*.J147

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RESEARCH AND PRACTICE IN COLLEGE LITERACY INSTRUCTION

Directed and Spontaneous Transfer of Textmarking: A Case Study

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Many learning strategies courses attempt to train college students to use reading, study, and test-preparation strategies to help them learn more effectively from content area texts. Students are trained to use active strategies, such as graphic organizers or textmarking, which yield artifacts for later review.

In teaching textmarking, programs based on a strategic-learning approach may emphasize annotation, which involves making marginal notes in the text, focusing on key concepts and supporting details. More specifically, annotation involves (a) summarizing and paraphrasing text information; (b) organizing text information in such a way that main ideas, supporting details, and examples are distinguished; and (c) indicating the relationship among ideas, using a personalized coding system to abbreviate terms, and noting confusing ideas (Nist & Hogrebe, 1987; Nist & Simpson, 1988). In addition to enhancing comprehension during reading, annotations appear to be useful for test preparation because they yield a study guide that condenses a large amount of text information. For these reasons, college developmental reading students cite annotation as having the most appeal and transfer to outside courses (Mealey, Frazier, & Duchein, 1990; Nist, 1987). Based on course evaluation information, students also report that they like the idea of annotation and understand its benefits (Frazier, 1991); however, many believe that annotation is too time-consuming. Thus, the likelihood of students transferring this strategy to their other courses may be low.

Yet the goal of strategy instruction is to provide learners with knowledge/skills that will be transferred to similar situations. Students are encouraged and often required to transfer textmarking and other strategies to content area courses while enrolled in a strategies course. It is further hoped that students will spontaneously transfer these strategies after exiting the strategies course.

Previous research on spontaneous transfer of problem solving may provide direction for similar research on strategy transfer. However, little research has explored the transfer of textmarking and other strategies in naturalistic settings. It appears that spontaneous transfer is more likely to occur with older students (Pressley & Dennis-Rounds, 1980) when training conditions include generalized rules directly applicable to the transfer task and specific examples of the transfer task (Gick & Holyoak, 1983) and sufficient similarity between the initial training condition and the transfer condition (Gick & Holyoak, 1980).

Given that students can be trained to annotate effectively, research needs to focus on examining whether students transfer this practice to other course material. As part of a larger study on textmarking and study strategy use, the present study examined in depth the annotation data collected from one student, Bob, in order to understand how a motivated college developmental reading student attempted to learn to annotate and transfer the strategy to content area course material.

METHOD

Participants

For the larger study, participants were students who were enrolled in both introductory biology and developmental reading for the first time. Only 5 of the pool of 66 students enrolled in developmental reading at a large southeastern university met these criteria. Four, including Bob, were willing to participate. Specifically, Bob was a white, 20-year-old sophomore, enrolled for his third semester in college. He was described by his reading instructor as a motivated, responsible student whose work was "impeccable." Bob's high school grade point average was 3.9 out of 4.0, his college grade point average was 2.25 out of 4.0, and his ACT composite score 21. As a full-time student, Bob was enrolled in reading, introductory biology, introductory chemistry, calculus, and experimental statistics. Of the four students, then, Bob was chosen because (a) he was motivated and enthusiastic, (b) he was more articulate than the other students, (c) he was interested in improving his academic performance, and (d) he evidenced a greater commitment to the study in attendance and effort than the other students.

Materials and Data Sources

Materials consisted of copies of the biology textbook that were annotated by a panel of three expert annotators (college reading instructors) to develop a template (reliability = 94%) against which to compare student textmarking, as well as textmarking checklists with which to provide feedback to students (Simpson & Nist, 1990). Data sources included photocopies of (a) assigned textbook pages to examine for textmarking and (b) journals and transcripts of structured and unstructured interviews with Bob and his reading course instructor.

Procedures

Data collection occurred over a semester. All reading students were instructed in annotation via a teacher-to-learner direct explanation model (Nist & Kirby, 1986) using a biology chapter during the second, third, and fourth weeks of the semester. Students were taught to write brief summaries in the text margins using their own words, enumerate multiple ideas in an organized fashion (i.e., causes, effects, characteristics), write key information on graphs and charts included in the text when appropriate, write possible test questions in the margin, note confusing ideas with a question mark in the margin, and develop a personalized coding system (Simpson & Nist, 1990). Direct teaching sessions were followed by repeated cycles of guided and independent practice, as well as instructor feedback.

In addition to attending the reading course, Bob was interviewed every two or three weeks by the researchers about his performance in biology and given immediate verbal feedback on his annotation (written feedback was provided two days after each interview). Interviews were scheduled at least two days in advance of the biology exams. He was also asked about his reasons for annotating and about task, time, and testing demands of the biology course. As a check for spontaneous transfer, Bob was asked during the final interview whether he had annotated in any of his content area courses other than biology.

Data Analysis

Ongoing data analysis consisted of two main components: document analysis and constant comparative analysis (Miles & Huberman, 1984). Document analysis involved examination of Bob's annotations for quantity and quality. To examine quantity of annotations, the number of pages actually annotated was compared to the specific pages to be annotated; annotations were scored against the template for main idea agreement and the degree of agreement between Bob's annotations and the template's was calculated. To examine quality of annotations, the annotation checklist was used and distinctive textmarking patterns were noted. Changes over the semester were also examined.

Constant comparative analysis of document analysis results and interview transcripts were conducted by a research team consisting of the researchers and two doctoral students in reading education. As data were collected, each team member individually read and reread all data sources. The team met every two or three weeks to discuss findings. As this ongoing and recursive analysis proceeded, matrices were developed to display the data. Data were triangulated across the researchers and all data sources in an attempt to control for possible bias.

RESULTS

We examined several aspects of Bob's work, specifically the quantity and quality of his directed annotations, how his annotations changed over time, his perception of strategy utility, and, finally, the quantity and quality of spontaneous annotation in courses other than biology.

Directed Annotation in Biology

Bob attended five sessions during the semester with the researchers, at which time he turned in his annotations for photocopying. For the first of three document analyses, which occurred during the fourth week of the semester, Bob turned in five chapters (68 pages). In these annotations, Bob's main idea agreement score was 68%. Although key concepts were paraphrased, annotations were extremely wordy, written in complete sentences rather than phrases. Graphic aids, summary statements, and chapter summaries were ignored completely, and information found on pages that included mostly graphic aids was not marked at all. Furthermore, although annotations were wordy, supporting details and examples were not provided. For example, he defined *flagella* and *cilia* but did not provide details for where and on what organisms the structures were found.

Bob abbreviated many words, used symbols, and made significant attempts to organize his annotations. Underlined headings, dashes, numbers, asterisks, parentheses, and arrows were used to indicate relationships. For example, terms and definitions were separated by a dash. Also, the few supporting details he did include were indicated by enumeration or small dashes listed under a heading. In addition, arrows were used to illustrate cause-effect relationships in the metabolic pathway and photosynthetic reactions. Bob indicated that he had studied this first set of annotations and felt prepared for the first biology exam. However, he later reported scoring 56% on this exam.

During the eighth week of the semester, when nine chapters were required to have been read and annotated, Bob had annotated only three chapters. Although he annotated considerably less material for this second document analysis, his annotations were much more thorough. Bob explained, "I decided to annotate every little thing." Annotations were often complete sentences. Much of the text information was copied verbatim, and little paraphrasing was apparent. Most graphic aids were marked in some manner, with checks or memos to "study," some captions were copied verbatim, and some pictures were redrawn. Summary statements and chapter summaries were marked by checks and often copied verbatim in the margins. Attending to so much information automatically increased Bob's main idea agreement score considerably (86%). However, annotating "every little thing" showed that Bob misunderstood that the purpose of annotation was to condense and paraphrase the text.

Although Bob included much more information for this set of annotations, he tended to include the main ideas but omitted sufficient supporting information, or failed to organize it in a clear manner. It appeared that random fragments were copied verbatim and placed under major concepts. For example, Bob copied verbatim phrases in defining the concepts of *continuous* and *discontinuous variation* and *quantitative inheritance.* From the way this information was noted and arranged (all three concepts were listed as separate categories), it appeared that Bob was not aware of the relationship between quantitative inheritance and continuous variation.

Overall, his second set of annotations was extremely wordy and detailed and included all parts of the text (e.g., graphic aids, summaries, problems at the end of the chapter). It appeared that Bob attempted to rewrite the text in an effort to include all of the important information; but because annotations were often verbatim, they were of poorer quality than the previous set, which was paraphrased to a greater extent. During the first session, Bob was advised to annotate graphic aids and to paraphrase and condense. However, the second document analysis revealed that he responded only to the first suggestion; he persisted in copying verbatim. Bob indicated that he thought that he was better prepared for the second exam than he was for the first, even though he had only four more days in which to read and annotate six more chapters. Although he expected a better grade, he reported scoring 58% on the exam covering his second set of annotations.

For the material covered in the third analysis, Bob read and annotated all of the five required chapters with the exception of the last nine and five pages of the last two chapters, respectively. He annotated in much the same way as the second set. Once again, annotations were written in complete sentences and were very detailed and wordy. Information was paraphrased to a slightly greater extent than previously, however, and less information was copied verbatim. In addition, even greater attention was paid to graphic aids. Although much unnecessary information was noted and many captions copied verbatim on figures and diagrams, Bob related the graphic aids to the text with symbols and summary comments. For example, next to a diagram of DNA replication, Bob noted with labels and arrows "parent template—DNA assembly is usually continuous but discontinuous on other—must be assembled behind start tags that become positioned at intervals along parent DNA—enzymes linked in single chain." As in previous annotations, Bob identified key ideas with relatively high accuracy (88%). Interestingly, in several places where a key concept was missing, supporting information and examples were provided. For example, he listed the following, "peas, beans, corn, flies, mold, bacteria,—short lived,—reproduce rapidly," without ever mentioning that these organisms lend themselves to genetic analysis because of the two stated characteristics.

During the last meeting, before finding out his grade on the second exam, Bob reported feeling confident about the third exam. He indicated that he knew much more material on the second exam, thought he made a good grade, and annotated his third set of annotations in the same way as the second. After finding out his grade on the second exam, however, Bob dropped the course and, thus, did not take the third exam.

Self-Reported Changes in Strategy Use

Over the semester, the amount of information per chapter that was annotated increased substantially. Initially, Bob's first annotations omitted much information. He reported not annotating thoroughly because he already knew the information and believed he had a strong background in science. He explained that he would annotate more when he encountered unfamiliar or difficult material:

> The first couple of chapters—I already know all that....it's, like, "mole," "atom," and we'll start talking about chemical things, and I've already had chemistry....There's no sense in me annotating that for my knowledge when I already know that. But I know that...it's gonna get a lot harder, and that's when my annotations are gonna really be necessary....Maybe there's a sentence that's kinda hard, and I'll annotate that.

Because of his low grade on the first exam, Bob annotated more material, including all parts of the text such as graphic aids, summary statements, and problems/questions at the end of chapters. He explained that test questions focused on details and that writing complete sentences was helpful:

> I made a D on the exam, and I'm really annotating now. I'm annotating every little thing....That test had...details...and examples that should have been in my annotations. I'm, like, putting examples in all my annotations now. I want to [annotate] in complete sentences because it helps.

Bob also stated that he annotated certain information in greater detail because it was referred to during lecture, and he expected it to be on the exam. For example, information and graphic aids dealing with stages of meiosis and mitosis were annotated in detail. Conversely, he ignored information not covered in lecture, such as material dealing with microscopes, because he did not expect that material to be on the test.

In general, it appeared that decisions on what material should be annotated and the degree of detail were based on (a) knowledge of material, (b) performance on biology exams, and (c) expectations of test material. Overall, adjustments of textmarking resulted in greater quantity, rather than substantial improvement in quality.

Perceptions of Strategy Utility

Bob explained that annotation helped him understand while reading because of the extra time and concentration required to annotate. However, he also noted that spending extra time can be a disadvantage of the strategy:

> Annotating really helps me to understand...[and] comprehend while I am reading, because it made me reread information....[Annotations] are a pain. I'm going through slow, rereading—trying to figure out what they're talking about....It was just so long that sometimes I got bored.

He also explained that he read over his annotations to study for exams and believed that they helped him even though his grades in biology indicated otherwise. He stated, "Annotation helped me recall information for exams....At least I thought it did at the time. [laughing] I made a 56 and 58 on my biology exams....it [helped] in reading [class]. I got all As."

In sum, Bob considered annotation to be a useful strategy for comprehension during reading and later for test preparation. His use of the strategy was consistent with his statements about its utility. Bob's adjustments in textmarking were, to a great extent, driven by his belief that test performance would be enhanced. However, he did not appear to recognize that the quality of his annotations had not improved despite his increased attention to text.

Spontaneous Strategy Transfer

Bob did not annotate in any of his other courses. When asked why, he reported that "it wasn't needed" in the courses he was taking (calculus, chemistry, and experimental statistics). However, he did say that he would annotate in other subjects if it were "appropriate," meaning courses that required considerable reading. It was interesting to note Bob's misperception that chemistry was a subject requiring little reading. When asked if he would have annotated the biology text if he had not participated in this study, Bob replied:

> Well, maybe not. Maybe annotate some. It's making me read more. I mean, that test had....details and examples that should have been in my annotations. I think the test came from the book. I thought the lecture would pretty much cover it, but there was some stuff from the book that wasn't in her lectures.

Overall, it appeared that Bob had a relatively positive attitude toward annotation and believed that it was a useful strategy for comprehension during reading and for test preparation. His main concern with annotating was that the process consumed an inordinate amount of time. Statements in the final interview indicated that he intended to use the strategy when it was needed and appropriate. However, his statements about spontaneously annotating biology revealed a reluctance to annotate even in courses that did require a considerable amount of reading.

DISCUSSION

Because we examined only one student's work in depth in the present study, the results cannot be widely generalized. Moreover, self-report data can sometimes be inaccurate or misleading. This study examined annotation transfer in only one textbook and one content area; therefore, results may not be generalizable to other content areas or perhaps even other biology textbooks. Moreover, the biology material used for training in the developmental reading course was less difficult and much shorter than the material assigned for the first biology course exam. These differences may account for Bob's difficulty in annotating, his poor performance on biology exams, and perhaps his reluctance to transfer the strategy. Acknowledging these limitations, however, these data provided important information regarding textmarking transfer.

Bob's beliefs about the strategy's utility were reflected in his increased efforts to annotate. This finding is supported by research indicating that perceived strategy utility positively affects strategy transfer (Brown, Bransford, Ferrara, & Campione, 1983; Duffy et al., 1984). Bob usually kept up with his reading and annotating, an "achievement" he credited to his belief that the strategy enhanced concentration and comprehension. He also stated that annotation would enhance his test performance, and he used his annotations for review and exam preparation. However, unless annotations are understood rather than simply memorized, they will probably not help test performance. Bob's poor ability to paraphrase and organize information appeared to affect the quality of annotations and contributed to his poor test performance.

Prior knowledge was also important in Bob's annotations. That is, he initially annotated only unfamiliar material because he believed it was unnecessary to annotate material he already knew. This result is related to findings in Mayer's (1984, 1987) literature reviews that revealed that organizational strategies tended to be most effective when the reader was unfamiliar with the material to be learned. It is likely that Bob perceived his understanding of familiar information to be sufficient without further notation or organization.

Bob reported "annotating every little thing" because of (a) the inclusion of many exam questions requiring knowledge of details and (b) his poor grade on the first biology exam. These findings are consistent with research on the relationship between knowledge of the criterion task and studying outcomes (e.g., Anderson, 1980; Anderson & Armbruster, 1984); when the criterion task is made explicit to students before they read the text, they will learn more from studying than when the criterion task is vague.

Particularly noticeable was Bob's tendency to overannotate. These results are congruent with Simpson and Nist's (1990) findings that novice annotators fall into one of three categories: those who annotate too much, those who do not annotate enough, or those who cannot precisely state key ideas. Bob generally fell in the first category, and his tendency to overannotate seemed to stem from his problems in paraphrasing. This finding supports earlier research (e.g., Brown & Day, 1983) which revealed paraphrasing to be one of the most difficult aspects of summarizing and one that develops later than ability in finding main ideas and organizing information (Brown, 1981; Brown & Smiley, 1978).

Also, Bob initially had problems distinguishing important from trivial information and organizing information. This difficulty likely contributed to his failure to see the big picture or the relationship between key concepts and supporting details and examples. Because Bob could not see the way information was related, he had difficulty organizing it and separating supporting information from main concepts. This problem was confounded by his difficulties with paraphrasing. Simpson and Nist (1990) point out that students who copy verbatim without paraphrasing often try to memorize information in preparation for exams and are subsequently surprised when confronted with exam questions which reword and paraphrase concepts.

Bob's initial inattention to graphic aids was also interesting. He stated that he ignored them because they were not mentioned in lecture or that the information presented was already familiar. Other reasons may be found in Hegarty, Carpenter, and Just's (1991) suggestions that the usefulness of graphic aids depends on the reader's knowledge and topic complexity. For example, a diagram may be most helpful when the reader has the knowledge necessary to extract the important information from the diagram and if the topic is sufficiently complex that the reader cannot visualize spatial representations of the information without a diagram. Bob's annotations and reports revealed that he probably did not have the knowledge necessary to extract important information from graphic aids.

Bob did not transfer textmarking to other courses during the semester. He stated that it was not needed in the math and chemistry courses he was taking, which may be a reasonable conclusion for someone not trained to annotate in these particular content areas. In the present study, reading students were trained to annotate history, biology, and psychology texts and were encouraged to transfer the strategy to their other content area courses for extra-credit points. Simpson and Nist's (1990) findings that annotation must be adjusted according to the task and content may explain, in part, Bob's failure to annotate in other content areas. Earlier transfer research also reveals that transfer is more likely when training includes specific examples of the transfer task (e.g., Gick & Holyoak, 1983). It is possible that Bob did not perceive sufficient similarity between his learning situations and possible transfer situations.

Direct explanation research, which suggests that students are more likely to transfer strategies when they have detailed information about how and when to use them (e.g., Duffy et al., 1984), was not supported in the present study. Although direct strategy explanation was emphasized in the reading course, and Bob believed that annotation was a useful strategy, he still did not spontaneously transfer its use. Another possible reason for lack of transfer is simply Bob's poor performance in biology. Clifford's (1984) research showed that strategy maintenance was contingent on learners attributing their successes and failures to the use of appropriate and inappropriate strategies, respectively. Although Bob reported that annotation was useful, it is possible that he did not really believe that it helped him in his biology course and that his failure influenced his decision about annotating in other courses.

CONCLUSIONS

It may be unreasonable to expect some developmental reading students to grasp the use of annotation during one semester. The complexities involved in summarizing, paraphrasing, and organizing information may require more time for direct explanation and strategy practice. Second, annotation alone is clearly not sufficient to compensate for a lack of specific content knowledge. Finally, this study addressed the difficulties one student faced as he attempted to grasp and apply an annotation strategy and the various factors that motivated his efforts; therefore, no conclusions should be drawn about efficacy of the strategy itself.

Given these problems, training should emphasize an even stronger rationale for using textmarking in order to motivate students (e.g., Duffy et al., 1987). To improve the quality of annotations, training in specific strategy components may need to be stressed. For example, students may need more training in identifying key concepts, organizing information, identifying text structures, and paraphrasing. Given Brown and Day's (1983) findings that summarizing text appeared to be one of the most difficult processes for students to learn, students may benefit from instruction in summarizing (Brown, Campione, & Day, 1981; Day, 1980). Ideally, strategy training should be incorporated throughout the entire instructional system if learners are to become truly strategic (Schallert, Alexander, & Goetz, 1988). Unfortunately, this is an unlikely occurrence in the near future. At the very least, then, students may be more strongly supported in their efforts to become strategic if their actual content area course materials are used as the main texts in college reading programs. Students may more clearly see the relevance of the strategy use and, thus, may be more likely to transfer the strategy to other situations.

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Person, Process, Product: Goals of an Integrated Reading/Writing Curriculum for Underprepared College Freshmen

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> From the good, to the bad, to the funny. This basically sums up the readers and their essays today. After hearing some essays,...I was touched; [after others,] I was in awe. After today people came closer and friends were made. They weren't made verbally, but in our hearts, we were close.
>
> —Matthew, Fall 1991

Matthew's words were written in a reader-response entry (Bleich, 1975; Probst, 1988; Rosenblatt, 1978) after a classroom experience known as Students at the Podium in which students chose one of their favorite essays to read orally to the class. Essay topics ran the gamut—from personal experience essays that dealt with the deaths of family members and high school friends, to comparison-contrast essays that explored themes from the novels the students had read, to sequels and changes in point-of-view that challenged students to experiment with the words and characterizations of the published authors.

At midterm, Matthew and his classmates in the integrated reading/writing program for underprepared college freshmen had written three polished essays and read two full texts, *I Know Why the Caged Bird Sings* by Maya Angelou and *Flowers for Algernon* by Daniel Keyes. They had participated in peer conferencing and group editing of many drafts of their essays and had written extensively in response to their readings, exploring their affective and associative reactions to what they had read (Bleich, 1975).

The students were actively involved in their learning and had begun to take risks both in exploring their personal reactions to what they were reading and in exploring the significance of their own life experiences in what they were writing. As they conferenced on their essays, seeking their peers' honest responses and reactions to what was being shared, they were challenging one another to more specific and meaningful writing as well. They were also publishing their work in a real way by sharing their essays formally with their peers during Students at the Podium.

Students' extensive and honest responses to all their reading and writing experiences also helped to develop the integrated reading/writing curriculum that united two courses previously taught in isolation from one another. This article explores the three goals that unified the two courses and helped create the whole language curriculum for the integrated reading/writing program.

THE INTEGRATED READING/WRITING PROGRAM: HISTORY AND GOALS

Historically, the developmental reading and writing courses at the large midwestern university where the integrated reading/writing program was created had been taught separately: The reading improvement course had been administered by the developmental services program and the developmental writing course by the English department. Little opportunity existed for any coordinated effort between the two departments to help underprepared freshmen in their quest for literacy acquisition.

In the fall of 1989, a process was set in motion that helped create the curriculum that united the heretofore isolated courses. Instructors from each course were invited to collaborate, reenvisioning the goals and instructional strategies of the courses and designing a "dream" curriculum that would integrate reading and writing for college-level developmental students.

The curriculum planners first consulted Bartholomae and Petrosky's (1986) work on a college reading and writing course. However, since the instructors could not merge the two courses into one as Bartholomae and Petrosky had, it became clear that they needed a new vision for the integrated reading/writing program. Baker and Brown (1984, p. 370), in a description of three types of knowledge necessary for successful learning, provided the framework for the curriculum planners' own integrated reading/writing goals:

> In order to succeed, the student must have at least rudimentary self-knowledge (i.e., myself as a memorizer), task knowledge (gist recall vs. verbatim recall), and text knowledge (importance vs. trivia, organization of text, etc.). The orchestration and coordination of these forms of knowledge demand a sophisticated learner.

Adaptations of these three forms of knowledge—self-knowledge, task knowledge, and text knowledge—became the primary goals of the integrated reading/writing program. Self-knowledge was expanded to include nurturing feelings of self-worth, self-confidence, and self-awareness in students; task knowledge included fostering the recognition and appreciation of one's own reading and writing processes; and text knowledge was expanded to include the exposure to, and appreciation of, whole texts in both reading and writing. After the curriculum had first been implemented in the fall of 1990, the labels for the three kinds of knowledge and their parameters were expanded and adapted once more to reflect the emphases that evolved within the reading/writing classes. The new labels more accurately reveal the focus that the curriculum seems to foster within the classroom: person, process, and product.

Focus on Person: "Help kids become self-educators" (Goodman, 1988)

Ken Goodman's admonition was heard; the question was how to accomplish the goal of nurturing self-educators. The integrated reading/writing curriculum planners chose to encourage self-worth, self-confidence, and self-awareness in their students and, thus, to foster self-education. They incorporated readings that would speak to others' struggles for these qualities in their own lives, concentrating particularly on authors whose racial and national identities had prevented their widespread representation in standard reading and writing anthologies. These authors' own lives represented the acquisition of self-worth, self-confidence, and self-awareness in the face of overwhelming obstacles (e.g., Maya Angelou, Richard Wright, Dick Gregory, Alice Walker, Lucille Clifton).

Similarly, the teachers chose instructional methodologies that they hoped would contribute to students' knowledge of themselves as human beings, as readers and writers, and as learners:

- Encouraging personal narratives for initial essays;
- Providing numerous opportunities for peer and teacher feedback on drafts of essays;
- Encouraging students to rework personal narratives for different audiences and to accomplish different purposes;
- Reading *I Know Why the Caged Bird Sings* by Maya Angelou, *Flowers for Algernon* by Daniel Keyes, *Wolf That I Am* by Fred McTaggert, *Twelve Angry Men* by Reginald Rose, and numerous poems and articles by African American and Native American writers;
- Encouraging collaborative in-class writing and small group inquiry about readings;
- Providing frequent opportunities for written reflection about readings and the students' own reading and writing processes;
- Using collaborative short answer and essay tests on the readings;
- Providing immediate teacher response to the content of students' writings.

Focus on Process: "Invite students to become partners in learning" (Atwell, 1988)

For proficient readers and writers, the reading and writing processes can become tacit, unthinking acts. Sharing reading and writing processes aloud with less proficient readers and writers demystifies the intangible and transforms it to the concrete and manageable. Authentic teacher modeling can reveal the process of making sense in reading and writing. The focus on process demanded more teacher modeling and greater inclusion of metacognitive activities to help students become more aware of their own reading and writing behaviors.

In the integrated reading/writing program, the teachers wrote with their students, read aloud and silently with them, and the not-so-magical or mysterious hard work of comprehending and composing text became clearer. The teachers became vulnerable learners themselves, taking risks, sometimes stumbling or falling in their efforts, revealing themselves to be less than perfect in their own reading and writing processes.

Thus, it became all right to try most anything, to share written work orally, to receive feedback and suggestions for improvement (some of which worked; some of which did not), to rewrite and reread, to enjoy the reward of communicating effectively or of discovering an insight into a challenging reading. Through modeling, teachers became readers and writers in their classrooms. In this atmosphere, self- reflection, self-evaluation, and self-correction occurred often and naturally.

To help students become more conscious of their own reading and writing processes, the teachers utilized a variety of metacognitive activities. The following were especially effective in demystifying the reading and writing processes and making self-knowledge of these processes a greater reality for the students:

- *Reader-responses*—Students wrote about the dominant feeling a reading had evoked in them, the possible reasons within the text and within themselves for that emotional response, and what that response suggested about themselves as human beings and as learners;
- L*earning logs*—Students explored in writing what they had learned about reading, writing, and themselves as readers and writers after specific classroom activities (e.g., Students at the Podium, copy-change collaborative poem, collaborative tests);
- *Self-evaluation essays*—At midterm and during the final week of the semester, students evaluated themselves as readers and writers and developed goals for improving their reading and writing;
- *Retrospectives*—Students wrote letters to their teachers exploring what they were and were not satisfied with in their drafts, specifying the kind of feedback they would like from the teachers.

By being asked frequently to write about themselves as readers and writers, students' often unconscious decisions and behaviors were made observable and, thus, debatable. By frequently demonstrating their own reading and writing processes, teachers made their own processes observable and debatable as well.

Focus on Product: "Only within some whole, actual discourse based on individual thinking can words, sentences, paragraphs—or style, rhetoric, and logic—be meaningfully practiced and examined" (Moffett, 1981, p. 7)

Text is important. Whether producing text or trying to comprehend someone else's text, students soon discovered that the final product does matter. Yet Moffett's words reminded the teachers that text must remain in meaningful context for the learner; it must represent "whole, actual discourse." The integrated reading/writing curriculum planners attempted to preserve that wholeness in a number of ways:

- Self-topic selection for essays;
- Whole class brainstorming and drafting to encourage collaboration and risk taking;
- Encouraging students to write whole pieces from the start of the class rather than emphasizing the sentence or paragraph first and moving into introductions, etc;
- Encouraging group editing and proofreading to polish final drafts for "publication";
- "Publishing" students' essays in formal class presentations, small group sharing, a class magazine, and outside publications (other departments' newsletters and magazines, former high school newspapers, and campus and local newspapers);
- Emphasizing content first in pieces the students were writing and reading, followed by discussions of form and style;
- Using entire books, articles, poems, and essays around a common theme rather than excerpts or chapters from articles or books on unrelated topics;
- Stressing both affective and associative responses to the readings (Bleich, 1975) through writing;
- Encouraging experimentation with authors' texts—rewriting text from another character's point of view, writing sequels to stories, copy-changing poems and/or paragraphs (Dunning, 1987), changing one important element of a story and exploring the consequences, taking on a character's persona and rewriting the story in first person.

Implications for Instruction: "We do not teach writing [or reading] effectively if we try to make all students...the same. We must seek, nurture, develop and reward differences" (Murray, 1985, p. 5)

As Matthew so eloquently demonstrated in his response to Students at the Podium, "Writing [and reading]...involves the intuitive and non-rational as well as the rational faculties" (Hairston, 1982, p. 86). Flowers and Hayes (1981, p. 386) write:

> By placing emphasis on the inventive power of the writer [learner], who is able to explore ideas, to develop, act on, test, and regenerate his or her own goals, we are

putting an important part of creativity where it belongs—in the hands of the working, thinking writer [learner].

The importance of students' intuitive, non-rational, and inventive powers cannot be overemphasized. Focus on person, process, and product was combined with commitment to the intangible, intuitive, and instrumental quality of the value of human differences and creativity. What evolved was a dynamic curriculum that integrated reading and writing naturally, creating a whole language literacy experience for college-level developmental students.

After three semesters of implementation, four essential components of the whole language curriculum emerged:

1. *Collaboration*—Between teachers, between students and teachers, and among students themselves, collaboration helped establish an atmosphere of risk taking where all members of the discourse community were willing and able to express themselves and experiment both in responding to what they read and in composing their own essays.
2. *Whole texts*—As students read entire books and complete articles and poems, as students composed entire essays, the "whole, actual discourse" to which James Moffett alludes became the focus of the class. Reading and writing skills were taught in contexts in which they were needed for the meaningful tasks at hand.
3. *Reflection and self-evaluation*—As students were offered the time in which to think and write about what they had heard, read, and learned, they became more aware of what they did as readers and writers. They became more metacognitively aware of themselves as active participants in their learning processes.
4. *Teacher modeling*—As teachers actively read and wrote, as they orally shared their own meaning-making processes both in comprehending and composing, students were able to see firsthand that their own struggles and false starts and triumphs were natural human endeavors. The seemingly mystical and sometimes overwhelming acts of reading and writing became observable and, thus, manageable.

A community of learners evolves in a classroom context in which students and teachers are active participants in literacy acquisition and where individuals are encouraged to take risks, learn from each other, and respect one another's uniqueness.

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Fostering Metacognitive Growth in College Literature Classrooms

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Literature in the language arts curriculum is generally taught as a series of text-based skills intended to facilitate the analysis and interpretation of literary text. As teachers, we meet this pedagogical goal through classroom activities that focus on the structure, language, and conventions of literary text. We ask students to demonstrate competence by applying requisite skills to a handful of canonized masterpieces. Moffett (1985) notes that we then assign writing that "monitors assigned reading and tests coverage of given content" (p. 54). He argues that this pattern brings reading and writing into a "stupefyingly negative relationship to each other that makes students want to avoid both. Every time you read, you have to write something about it to show you got the point" (p. 54).

In some ways, our pedagogy has profoundly limited students because it focuses inordinate attention on the literary product (i.e., the text). Furthermore, by promoting a standard methodology for interpretation of literary texts, the traditional literature classroom largely ignores the subjective nature of all language arts processes. Students experience literature by applying a formal paradigm with little apparent connection to their own reading and writing behaviors. And because of their status as objective analysts of the literary product, they come to believe that "literature" is something produced by "Great Minds" engaged in an esoteric diversion. (Scholes [1985] claims that we approach texts as "secular scripture" [p. 12]). Unfortunately, they often fail to see themselves as practitioners of the same literacy process.

Perhaps because in traditional literature classrooms our focus is on textual—not human—idiosyncrasy, we almost never ask students to systematically investigate the source of their own learning processes. One way to expand our literature curriculum so that it creates opportunities for students to see themselves as generators of their own literacy process is to design assignments that are openly metacognitive. Loosely defined, the word *metacognition* refers to the understanding and control that students have over their learning strategies. Baker and Brown (1984) see metacognition as the "ability to reflect on one's own cognitive processes, to be aware of one's own activities while reading, solving problems, and so on" (p 353). They believe that readers who are metacognitively aware have "self-knowledge," "task knowledge," and "text knowledge" (p. 370). The concept of metacognition has influenced many curricular areas, but it has not yet been widely applied to the teaching of literature, especially in college classrooms.

Yet the principle of metacognition is theoretically consistent with our current understanding of the reading process. In fact, more than fifty years ago, Rosenblatt (1938) argued that language arts teachers had fundamentally misunderstood the activity of studying literature. There was no such thing, she claimed, as a "generic text" that could be analyzed objectively. Readers brought to each literary encounter unique "personality traits, memories of past events, present needs and preoccupations" that, when applied to "the peculiar contribution of the work of art," resulted in "a unique experience" (p. 37). Consequently, literary interpretation was directly linked to the proclivities of individual readers.

By the 1960s, reading research had corroborated Rosenblatt's seminal theory about literature as personal exploration. Smith (1988), Goodman (1986), and others had established that all reading activity was an evolutionary process of bringing meaning to print as readers drew on their prior knowledge—both of textual convention and of the world—to predict, comprehend, and experience as they read. And if the reader himself or herself is the locus of meaning-making activity, then metacognitive knowledge is especially critical to the legitimacy of literary interpretation. Tompkins (1980) points out that if we see textual meaning as a "function of the reader's consciousness," then the "powers and limitations of that consciousness become an object of critical debate" because "we are always in the grip of some value system" (p. xiii). And in order to understand that system, students must look critically at the processes that shape their values and, subsequently, their interpretations. Furthermore, they must become aware of the processes influencing other students. Therefore, developing all three metacognitive dimensions is an important pedagogical goal.

The journal is one way of helping students develop their metacognitive potential. Kirby, Nist, and Simpson (1986) believe that asking students to write in journals about their own reading processes helps them "develop a sense of control and independence" (p. 17). Furthermore, students can chronicle their meaning-making processes from a variety of perspectives, by recalling and evaluating their own literacy histories. They can also respond to current reading, probe diverse sources of their own literary insights, and scrutinize their own reading and writing behaviors. Finally, as the journals track students' meaning-making behaviors over time, they become catalysts for collaborative classroom activities that allow students to share their emerging awareness of themselves as literate human beings.

The purpose of this article is to share three journal assignments from two college freshmen whose work illustrates the potential of literature to promote metacognition as self-awareness. Each activity addresses a different dimension of metacognition: The first asks students to recall their own literacy history, the second asks them to produce literature and then to appraise their own creative process, and the third asks them to analyze their interpretations of a literary work by probing the emotions and associations that inform it. This article will also demonstrate how the power of metacognitive assignments extends beyond the student, benefiting both teacher and peers.

RECORDING A LITERACY HISTORY

On the first day of each literature class, I ask students to write responses to the literacy inventory in Judy and Judy's (1983) *English Teacher's Handbook*. This questionnaire asks them to review early literacy experiences, while also probing their reading and writing processes. As a first assignment, it tacitly implies that one of their curricular goals for the course will be to observe themselves as readers and writers, not just as digesters and regurgitators of literary text. Note the following examples from Jane's and Mark's inventory responses:

Who taught you to read? How much can you remember about learning to read? What's the first book you can recall reading?

Jane: I learned to read (from what I remember) in the first grade. My teacher was Mrs. Kimble. The only thing I remember was learning how to put consonants and vowels together to form words. The first book? Probably Dr. Seuss!

Mark: My parents taught me to read.

What do you think are your major strengths as a writer?

Jane: My strengths as a writer would be my imagination, use of words, and my enthusiasm to use a thesaurus or dictionary when in need. I think I have a sense of passion and expression in my writing, at least I try to. I'm not satisfied with just anything. I try to appeal to the reader, and keep them guessing.

Mark: My strengths as a writer are finishing an assignment.

What weaknesses do you feel you have in writing?

Jane: My weaknesses would have to be some of my sentence structures, and my tendency to drag on and on, making a short story long! Sometimes I feel that I use too much detail and unnecessary words at times. I get writer's block very easily, and that isn't fun. I also think that when I'm writing a story I fail to follow through with an idea or thought and leave the reader hanging on a limb. I may jump from thought to thought, etc.

Mark: My weaknesses as a writer are spelling.

It is evident that these two students, who are in the same classroom, have markedly different English academic histories. For Jane, this inventory is an easy review of familiar experiences and behaviors. For Mark, it is a first step. The inventory is also a powerful pedagogical tool, illuminating for the teacher a student's general vision of the literacy process and his or her specific metacognitive awareness. Jane, for example, cites distinct writing strategies (e.g., dictionary use as a resource; reader appeal as a writing goal); Mark cites fortitude as his greatest strength. He seems to lack a vision of writing as a holistic process and indicates the convention of "spelling" as his greatest weakness. Because his answers are brief and undeveloped, he appears less self-aware.

When students discuss their responses to these questions in small groups, I ask them to wrestle with their own reading and writing processes. In this way, the inventory becomes a wonderful "setting the stage" activity: Students discover that there are similarities and differences in their literacy processes but that for each of them, reading and writing are "mixed bags." Jane's easy fluency is subject to writer's block; Mark always completes assignments. In addition, using this inventory for classroom discussion suggests that this will be a class that values the process of making meaning, as well as the result.

EVALUATING THE CREATIVE PROCESS

Another journal assignment that uses literature to develop metacognitive awareness invites students to produce their own literary texts for analysis. Asking them to cast abstract literary schema (e.g., genre, figurative language) into their own unique form allows them to experience literature as a creative process firsthand. The following examples are from a journal assignment in which students were asked to copy change[1] William Carlos Williams' "This Is Just to Say":

Jane:

"You are welcome"

I shut the door
only to

Mark:

I have stolen
The love
That was in
Your heart

keep the
strangers of the night
far from my existence
my intentions were
to let you in
Forgive me for
such inconvenience
since I had
told you it
would be open.

And which
Will never be
The same
Again

Forgive me
All my love
Is gone
For now

After each student has shared his or her copy change with the class, they write journal responses to a series of questions about how they composed their poems. These questions include both literal recollection of and abstract reflection on the creative process. As they share their writing strategies, students begin to see themselves as both critics and creators of literature. Note Jane's and Mark's replies to three of the questions:

Where were you when you wrote this poem?

Jane: In my apartment on my bed. It was late at night, so I didn't spend as much time as I wanted to.

Mark: I was sitting at my desk in my dorm, looking out the window into the sky. Listening to music and daydreaming.

How did the idea come to you?

Jane: I was just thinking of something simple, yet mysterious. Shutting the door, when telling a visitor it was to be open is a "forgive me" kind of situation, and this was the form of Carlos Williams poem that I was trying to recreate.

Mark: Got the idea of thinking of an x-girlfriend I went out with for a long time.

How did you decide on a particular order?

Jane: Some just fit in certain places—some lines longer than the other. Some were put at the end to give that mysterious effect.

Mark: I decided to put the words in order as I thought what happened to sound best.

Curiously, both Jane and Mark have difficulty describing the generative process: For Jane, the words "fit best" for a "mysterious effect"; for Mark, the words "sound" best. Each writer is both pleased and disappointed with the results.

Furthermore, when these journal entries are shared with classmates, students see that the creative process is idiosyncratic: Writers compose in a variety of locations for a variety of goals. Jane's idea is a direct response to her interaction with Williams' poem; Mark's is born of a personal experience he suddenly recalls. Probst (1984) writes that students "can be brought to sense their uniqueness" only through group experience: "Without others," he notes, "the individual remains indistinguishable, an image without a contrasting background" (p. 39). So the metacognitive value of this reflective activity is threefold: Students gain text, task, and self-knowledge as they cope with the poem's syntactic demands.

ANALYZING RESPONSE TO LITERARY TEXT

One of the most effective journal assignments I have found for developing metacognitive awareness is based on a heuristic by Bleich (1975), first introduced in *Readings and Feelings: An Introduction to Subjective Criticism.* This classroom activity does not confine students to the interpretation of literature based on linguistic and syntactic cues. Instead, it frees them to interact with a text metacognitively.

Bleich (1975) believes that a reader's initial response to any literary text must be emotional, a spontaneous reaction. To liberate this initial response, he suggests asking students to write about a literary text in two ways: affectively and associatively. The affective writing stimulates private emotion; the associative writing probes that first reaction by searching for its possible sources. I sometimes follow by directing students to select the one word that they consider the most important in the poem and then to speculate on the reason for that choice. Classroom discussion with this heuristic is multidimensional because it examines both student interpretations and the unique source of those interpretations.

This semester I used the Bleich (1975) heuristic with Roethke's "My Papa's Waltz":

The whiskey on your breath
Could make a small boy dizzy;
But I hung on like death:
Such waltzing was not easy.

We romped until the pans
Slid from the kitchen shelf;
My mother's countenance
Could not unfrown itself.

The hand that held my wrist
Was battered on one knuckle;
At every step you missed
My right ear scraped a buckle.

You beat time on my head
With a palm caked hard by dirt,
Then waltzed me off to bed
Still clinging to your shirt.

Following are excerpts from Jane's and Mark's affective, associative, and most important word responses:

Describe how you felt as you were reading this work. (affective response)

Jane: Reading this poem was almost depressing. You tend to feel very sympathetic and sorry for this young boy who is caught up in his father's drunkenness....

Mark: I feel a sense of love between the boy and father in how they were together and dancing.

What memories or associations did you experience as you read that may have influenced your response? (associative response)

Jane: The association that contributed to my response deals with how this boy had to deal with his "Papa" drinking constantly and getting pulled into dealing with it. What I mean is the "Waltz"—this represents everyday life. This dance is not occasional, but very repetitious and everlasting....

Mark: I associate this poem in the way my family is close and always there for me.

Choose what you believe to be the most important word in this piece. Briefly, defend your choice.

Jane: I think that *countenance* is the key word. *Countenance* means to extend approval or tolerance to, and in the poem, this was accomplished by the mother, obviously time and time again....This alcohol problem has extended itself far too long by the father, and that is what the message of this poem is.

Mark: Clinging—In how the boy was holding on to his father and did not want to let go.

Obviously, these students have markedly different interpretations of Roethke's poem. Curiously, although Jane is the more fluent writer, Mark displays more self-awareness here. Jane's analysis is strictly textbound. Her association springs not from prior experience but from an analytic reading of the text (e.g., "the 'Waltz'—this represents everyday life"). Even her choice of a "most important word" is driven by a dictionary definition, rather than any personal observation. It is ironic that Mark's interpretation, based on his own relationship with his father and not on textual exegesis, is closer to most scholarly opinions of the poem.

I usually follow the Bleich (1975) heuristic by asking students to write another journal entry for homework, this one based on class discussion. They must identify some way in which their private interpretation or interaction with the literary text differed significantly from an interpretation presented in class. Then they are to speculate about the source of that difference as they review their own reading processes. Encouraging students to define their own literacy processes empowers them metacognitively.

The pedagogical value of this exercise is obvious: As students share their interpretations and the associations that influenced them, they will understand firsthand that one text has the potential to generate multiple meanings, depending on the knowledge sources a reader taps. They will also realize, as reading theorists have suggested, that readers make those meanings by bringing all their prior knowledge and experience to the interpretive act. Sometimes that knowledge will be highly personal, as in Mark's association here with "the way my family is close and always there for me." At other times it will be based on conventional literary schemata, as in Jane's waltz metaphor. Sharing all these perceptions through class discussion promotes metacognitive growth as students become critical thinkers about the text, themselves, and others.

CONCLUSION

These journal-writing assignments invite students to interact with literature on several levels. In the process, they become appraisers of their own literacy strategies, creators of literary work, and budding textual scholars. As they reflect on these roles through classroom interaction, students see that the study of literature is not confined to dry and impersonal textual exegesis. Ultimately, the addition of metacognitive assignments to the literature classroom offers students an opportunity to become significant partners in their own educational experiences. Perhaps as important, such assignments expand the theoretical base of our literature curriculum, making our teaching pedagogically compatible with our understanding of reading as a process.

ENDNOTE

1. "Copy change" is a popular heuristic that asks students to insert their own content into the form of a recognized literary masterpiece. The technique was demonstrated by Steven Dunning in a workshop at Kent State University on February 16, 1989.

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Writing in Response to Reading: Strategies to Foster Comprehension

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Many researchers see reading and writing as constructive and generative processes that involve meaning making: "When we read, we generate meaning by relating parts of the text to one another and to our memories and our knowledge. When we write with clarity we generate meaning by relating our knowledge and experience to the text" (Wittrock, 1983, p. 601). Squire (1983, p. 582) suggests that "to possess an idea that one is reading about requires competence in regenerating the idea, competence in learning how to write the ideas of another."

If we believe that reading comprehension involves thinking about and learning from text, we can see how writing facilitates the reading process. Stotsky (1983), for example, cites more than 15 studies that indicate that writing can be used to promote reading and studying of informational "textbook-type" material. Other researchers have discussed the benefits of readers' expressive responses to literature. Bleich (1975, 1978) emphasizes the subjectiveness of reading as being heavily dependent on the text, the context, and on the reader's background knowledge. Writing enables readers to articulate their comprehension of and their personal links to the text. Blatt and Rosen (1984) contend that students who write in response to literature begin to examine texts more closely, to crystallize their initially vague thoughts and, ultimately, to arrive at a clearer understanding of the material. Davis (1992) suggests that a "reader-centered" approach is particularly important for college-level developmental reading students because although they "may have had limited experience in reading the kinds of texts that are expected of them in college" (p. 72), they do bring their own rich culture and background with them to the college classroom. Instructors need, therefore, "to encourage them to read in ways that bring their backgrounds to their reading" (Davis, 1992, p. 73).

The professional literature also advocates the use of journal writing in response to reading. Fulwiler (1980), for example, suggests that by "thinking and speculating on paper" (p. 14), students are able to write their way toward understanding. Journals help students to become more involved in the learning process since "they have committed themselves, through their own language, to at least a tentative exploration of an idea" (Fulwiler, 1982, p. 19).

Kay (1977), Sternglass (1986), Browning (1986), and Pezzulich (1987) believe that journals enable students to take risks that they might not ordinarily be willing to chance in the public classroom arena, or even in talking with an instructor face to face. The journal

> ...is one channel of communication which offers, without interruption, a solitude that can satisfy the student's needs to explore his ideas privately and freely; to test his responses; to put words to feelings—and to take them all back if he desires. For the student who is silent in class the journal provides a medium of thought through which he might hear himself...Even the extroverted student requires occasion for quiet deliberation. (Kay, 1977, p. 57)

Finally, Kennedy (1980) emphasizes the need to bridge reading and writing at the college level, suggesting that developmental/remedial students have "insufficient experience with written discourse, insufficient experience perceiving (reading) and producing (writing) language in print. Consequently, they have not fully mastered the way language is conveyed by script" (p. 132). Students, says Kennedy, need to be immersed in a total literary environment in which they "read, read, read" and "write, write, write" (p. 135). She suggests (p. 138) that

> Writing about reading is a way, fundamentally, of thinking about reading. Often, a student who feels that he has comprehended what he has read, finds when he starts to write, that he does not know at all what the author is trying to convey. When the student frames even the simplest sentence, he is forced to establish a set of meaningful relations; that is, he is forced to think more clearly.

TWO READING/WRITING STRATEGIES

In recent years, college-level developmental reading instructors have become increasingly aware of the benefits of incorporating writing activities into the reading class. Two reading/writing strategies, the Bleich Response Heuristic and the Double/Triple-Entry Journal, work particularly well with both native and non-native speakers of English and with students who possess a broad range of reading abilities. They can be used effectively in both reading and content area classes. The strategies are simple for students to learn and use yet allow for individual student creativity by encouraging a wide variation of responses to reading.

Three-Step Response Heuristic

The Bleich (1975, 1978) Response Heuristic asks readers to write about what they see, remember, or understand in the text, then to discuss how they feel about this, and finally to articulate the feelings, thoughts, and associations that flow from their perceptions. The questions that compose the heuristic work particularly well with novels and short stories or with any reading matter that has the potential to generate students' personal reactions, feelings or opinions:

1. What did you perceive (notice, remember) in what you read? What do you understand the reading to be about?
2. What do you think or feel about what you read? What is your opinion of what you read or an aspect of what you read?
3. What associations flow from your thoughts and feelings? What does it remind you of in your experience, from other readings or from your observations of other people's experiences?

The responses that follow were written by ESL students in a low-level college developmental reading class. The first set of responses is based on the novel *A Long Way From Home* (Wartski, 1982). The main character, Kien, a 14-year old Vietnamese orphan refugee, is adopted by a family in California. The book deals with his difficulties in adjusting to life in a foreign country and problems in his relationship with his adoptive parents after having previously lived on his own, with many adult responsibilities. Here are Sofia's[1] responses to Chapter 3:

1. I percieved behavier and mood of each hero—after coming to America. Everything amaized them because it was different. They did not expect to meet such kindness from American people.
2. I understand Kien's mood and nervousness. It's real very hard to begin life in foreign country. He was afrade to get lost there. In my opinion he is too young for facing up to troubles.
3. I associate Kien's feeling with mine. I feel myself uncamfortable in American yet. Everything is different here beginings from language and style of life. I also complicated about my language thearfor I can not communcat with Americans. I know it has to take a time and I hope to reach my goal behalf of my children. I want they to grow up in free country.

The remaining examples are based on *The Friends* (Guy, 1983), a novel about Phyllisia, a teen-age West Indian immigrant who befriends Edith, a poor American girl, when she moves to Harlem with her family. In Chapter 2, Phyllisia is forced into a fight by Beulah, the class bully. Sofia draws a parallel between this incident and a similar one in *A Long Way From Home* when Kien is forced into a fight by Sim Evans, a boy whose father has taught him to hate all Vietnamese. She writes:

3. Reading this chapter I associate it with Kien's story. With his feelings and thoughts when he was abused and beaten by Sim Evans. And his reaction against it was similar with Phyllisia's.

Finally, Son Kee shares some insights from his Korean cultural background when he responds to Chapter 6 of *The Friends.* In this chapter, a white junior high school teacher, Miss Lass, provokes an ugly racial scene in her classroom when she insults her black students by calling them unintelligent, lazy, and poorly behaved. The students, in turn, taunt her back with anti-Semitic remarks. Mr. Kee answers the second and third questions on his response sheet as follows:

> 2. I was surprised that all students made their teacher angry by kidding her. In our home country if such incident were happened it would be taken seriously for teacher's dignity. The leader of students would be punished such as immediate dismissing from school. Anyway I didn't hear of such incidents and I never read such thing even in a fiction because our morality refused to occur things like that in any circumstances.
>
> 3. Reading this chapter reminded me of the old saying which described how well teacher should be respected, that is, "when walking along with a teacher students(s) should follow after him* or at intervals of seven feet in order not to step up the teacher's shadow.
>
> *Those old days there was no female teacher as well as no female student at home during the feudal age. Learning was only man's privilege that was influenced by Chinese culture. The saying existed in Japan too.

In these responses, students begin with a literal retelling of the gist of the chapter. In their answers to the second and third questions in the heuristic, they move beyond "informational retrieval" (Petrosky, 1982, p. 21) to an interpretive and associative level at which they react to what they have read and make connections with their prior knowledge. This extension beyond text reconstruction to narratives of students' individual experiences affords readers opportunities to create their own unique interpretations. Additionally, when readers present their own examples and illustrations to elaborate on the text, teachers can evaluate students' understandings of the text in a more meaningful and comprehensive way than multiple-choice or short-answer type questions allow. More important, "this kind of elaboration and explanation is a necessary beginning to more critical examinations of texts and the assumptions underlying readers' reading of them" (Petrosky, 1982, p. 34). Responses to the heuristic also stimulate classroom dialogue about ideas presented in the readings and those generated by students. A prime example of this was Son Kee's observations about dichotomies in the respect shown to teachers in different societies. When shared with classmates, his writing initiated animated discussion to which other members of the class contributed comments informed by a variety of cultural backgrounds.

Double- or Triple-Entry Journals

The double-entry journal, or "dialectical notebook" (Berthoff, 1981, p. 45), is a specialized type of journal in which students respond to what they read. The notebook page is divided in half; on the left side students take notes from the text and on the right side they take notes on their notes, reacting to and commenting on what they have extracted from the reading. In a sense, "the facing pages are in dialogue with one another" (Berthoff, 1981, p. 45). Kirby, Nist, and Simpson (1986) refer to the double-entry journal as a "text to meaning" (p. 16) journal and see it as a tool for learning. Students "begin to wrestle with the language of textbooks and find ways to approach large tasks with a sampling of excerpts they can successfully understand" (p. 16).

In the triple-entry journal (Friedman, 1991; Withrow, Brookes, & Cummings, 1990), the notebook page is divided in three. The third "feedback" column enables the instructor or another student to read and respond to the first writer's reactions and questions. Thus, a three-way dialogue develops, initially between the student and the text and then with another reader about the first student's comments on that text. This strategy can be used equally well with expository or narrative material.

What follows is an example from Evelyn Garcia's journal. Students in an advanced-level, developmental reading class had read a chapter from a social psychology text describing a number of experimental studies related to the willingness of bystanders to help victims of crimes that they had witnessed. The responses in the Feedback column were written by the instructor:

Copy (Notes)	Response (Notes on Notes)	Feedback
Bystanders are afraid of offering help.	It's true. I remember about three years ago my cousin came to my house and told me to call the police and tell them that there were some guys trying to break into a new car. He asked me to do that because he didn't speak English. The police started asking questions. I didn't want to get involved so I asked for someone who speaks Spanish, but when my cousin answered the phone they started asking questions again so my cousin told them to forget about it.	I can definitely understand why a person would hesitate to get involved because he doesn't want trouble from the police. It's very sad and a very bad situation because it allows many criminals to commit crimes and to escape getting caught.
The more potential helpers there are, the less likely the victim is to get help.	Why? I feel that if there are many helpers the victim should get more help. I don't understand this very well, can you give me a short explanation?	Well, it doesn't seem to be logical, but a number of studies have shown this to be the case. Reread paragraphs #12 and 13 and see if you can see why.

Zamel (1988) emphasizes the power of the double-entry journal to help students interpret what they read and foster a developing awareness of the importance of what the reader brings to a text. She advises that these journals "allow for dialogues with a text so that students come to discover that the meaning of texts is not fixed 'out there' but is made while readers react to them" (p. 187). Evelyn's first entry illustrates this point when she confirms a statement in the text with an association from her personal experience. Her verification serves a similar function to the third question in the Bleich Response Heuristic. She creates her own personal meaning for the information in the text. In her second entry, however, she questions a statement in the reading and presents her own opinion about the situation described in the chapter. This response, unlike the first, is not supported by a specific personal association, so she must rely on evidence in the text to clarify the information for her. In the Feedback column, the instructor suggests that Evelyn return to a previous portion of the text that addresses her question. A three-way written discussion evolves. Initially, Evelyn enters into a dialogue with the text through her entries in the first two columns. The teacher uses the Feedback column as a teaching device but also encourages the student to become an independent reader. Rather than providing the "short explanation" Evelyn has requested, the teacher directs her to reread and try and solve the problem herself. This sharing of and reaction to responses is a valuable part of the learning process, in many cases encouraging students to reexamine their interpretations as "the meaning that [students] make is reconsidered, negotiated and revised" (Davis, 1992, p. 75).

CONCLUSION

Research has indicated that writing enables students to raise questions, clarify their ideas about and make personal connections to what they read. Readers who might be reluctant to articulate their thoughts in class have the opportunity, through writing, to express themselves more privately on paper. The reading/writing strategies suggested here have rich potential to stimulate interactive classroom dialogues among students and instructors about texts. Although more traditional approaches to reading comprehension feature instructor-designed questions, worksheets, or assignments, these heuristic-type tasks can be used generically with almost any reading material. They require minimal teacher preparation and foster the notion of a learner-centered classroom because the readers themselves direct the focus of text-based writing and discussion. Students are actively involved in the reading/writing process as they engage in an exchange of ideas about their reading. The classroom becomes a community in which students learn from each other as well as from their teachers.

ENDNOTE

1. Pseudonyms are used to preserve student anonymity, and writing is reprinted verbatim.

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RESEARCH AND PRACTICE IN EVALUATION OF READERS

Children's Emergent Reading Behaviors Across Different Kinds of Text and the Relation to Writing Systems

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Descriptions throughout the literature are detailing the ways in which reading and writing are related in literacy learning among elementary grade children (e.g., Heller, 1991; Shanahan, 1990; Tierney & Pearson, 1985), and research in emergent literacy suggests that reading and writing are not separate or sequential in young children's literacy learning (Barnhart, 1988, 1991; Ferreiro & Teberosky, 1982; Sulzby, 1983; Sulzby, Barnhart, & Hieshima, 1989; Sulzby & Teale, 1985). Instead, Sulzby and Teale (1985) suggest that the two processes are mutually supportive and closely tied to oral language (Sulzby, 1985a; Teale & Sulzby, 1986). Recent research in emergent literacy suggests that prior to formal instruction, young children use features of written language in their early reading and writing attempts (Barnhart, 1986, 1988, 1991; Clay, 1975; Dyson, 1986; Ferreiro & Teberosky, 1982; Read, 1971; Sulzby, 1983, 1985a, 1985b; Sulzby & Barnhart, 1992; Teale, 1986).

Sulzby (1985a, 1985b) and Sulzby et al. (1989) have presented several developmental schemes for various tasks in emergent literacy, including reading from storybooks and writing and reading self-compositions. In the present study, these developmental schemes were used to classify the data and examine the adequacy of the proposed scoring systems for their sensitivity in describing similarities and differences in a sample of kindergarten children.

The current research was designed to explore children's emergent reading and its relation to writing development and to examine the developmental nature of the reciprocal influences of reading and writing in young children. To this end, the present study focused on the relationship between emergent reading of storybooks and self-composed text, as well as the relationship between the reading of self-composed text and the writing system(s) used by young children to produce that text. Along these lines, the questions that guided the research were (a) What patterns of behavior can be described in children when they are asked to read a conventionally printed storybook? (b) What patterns of behavior can be described in children when they are asked to produce and then read their own self-composed text? (c) If children show developmental patterns in storybook reading reenactments, will they show similar patterns when they read their own self-composed text? (d) What is the relationship between children's reading of their self-composed text and their use of not-yet-conventional writing systems?

METHOD

Subjects

Kindergarten students in two classrooms from a large school district in a northwest suburb of Chicago participated in the study. Permission slips were sent to all parents, with agreement to participate reaching 91% across both classrooms. The total number of subjects was 32 (18 females and 14 males) and the mean age for subjects was 5 years, 5 months at the start of the study. Subjects came from an upper-middle to lower-middle socioeconomic area and represented a range of ethnic backgrounds (including Caucasian, Hispanic, African American, and Asian).

Materials and Procedures

Each subject was involved separately in two tasks. Sessions were tape-recorded, later transcribed, and double-checked for accuracy. Task 1, "Storybook Reading Reenactment," followed the method and analysis scheme of Sulzby (1985b). This task was designed to elicit two emergent reading attempts from each subject. The first reading attempt for all subjects was *Are You My Mother?* (P.D. Eastman). The second reading attempt took one of two forms: In one classroom, subjects read *Hubert Hunts His Hum* (Sue Lock), and in the other classroom, subjects read *Where the Wild Things Are* (Maurice Sendak). These books had been introduced and read repeatedly to all subjects by their respective classroom teachers, and multiple copies had been placed in each classroom, with subjects having access to the books at all times. Both reading attempts took place in one session, with *Are You My Mother?* read first. The examiner elicited each reading attempt by saying to each subject: "Read me your book."

Task 2, "Storywriting Production and Reading," followed the method used by Sulzby (1985a) whereby subjects were asked to write stories about how they learned to ride a big wheel/bicycle and were then asked to read their stories.

Analyses were based on detailed transcriptions of subjects' reading attempts on both tasks. Transcriptions were then used by two trained raters who independently scored each subject's responses during reading in Task 1 and Task 2 according to the classification scheme for young children's storybook reading attempts devised by Sulzby (1985b) with five-year-olds. This branching categorization scheme is arranged from Level 1 through Level 11, with Level 1 representing behaviors involving the least mature reading reenactment. Briefly described, this scheme categorizes responses as governed by print, governed by pictures, and well formed as stories (written language-like or oral language-like), or governed by pictures but not well formed as stories (following the action or labeling and commenting). Further, subjects' written productions in Task 2 were categorized with regard to writing system(s) used, including drawing, scribble, letter strings, letter-like units, and invented or conventional spelling (Sulzby et al., 1989).

RESULTS

Task 1: Storybook Reading Reenactment

Subjects performed the same way across both storybook reading attempts, indicating stability in storybook reading behaviors. As a result, these scores were collapsed, yielding one score for each subject on Task 1, and these scores were then used for all subsequent analyses.

Overall, storybook reenactment behaviors ranged the entire span of the Sulzby (1985b) classification scheme. Thus, at one extreme, some subjects were reading independently, forming a story by looking at and conventionally reading the print. At the other extreme, some subjects looked at the pictures and labeled and commented throughout the storybook. Consistent with previous research (Barnhart, 1991), analyses of the patterns of behaviors observed in subjects' storybook reading attempts did not show any categories or subcategories not included in the existing Sulzby classification scheme (Sulzby, 1985b) and confirmed the existing categories proposed by Sulzby (1985b).

Several patterns can be described in the number of subjects scoring across categories and subcategories of the Sulzby (1985b) classification scheme. When asked to read a conventionally printed storybook, most subjects (66%, 21/32) produced reenactments that clustered toward the lower-level storybook reading behaviors (Levels 1–7). These were categorized as Picture-Governed Attempts, in which children treated the pictures in the storybook as the source of the author's message. Although only 2 of these 21 subjects read the storybook by labeling and commenting on or following the action in the pictures of the storybook (Levels 1 and 2), the majority (90%, 19/21) read by looking at the pictures while producing a storylike unit that connected the pages (Levels 3–7). Further analysis of the reenactments of these 19 subjects showed that most (52%, 10/19) used the wording and intonation of written language (Levels 5–7). The remaining 9 subjects who also looked at the pictures and formed a story used wording and oral intonation of a storyteller (Levels 3 and 4).

Only 34% (11/32) of the reenactments were classified in the higher categories, or Print-Governed Attempts (Levels 8–11). Among these 11 subjects who looked at print as the source of the message, 1 refused to read for print-related reasons (Level 8), 2 were categorized as Reading Aspectually (Level 9), 5 were categorized as Reading With Strategies Imbalanced (Level 10), and 3 subjects were Reading Independently (Level 11).

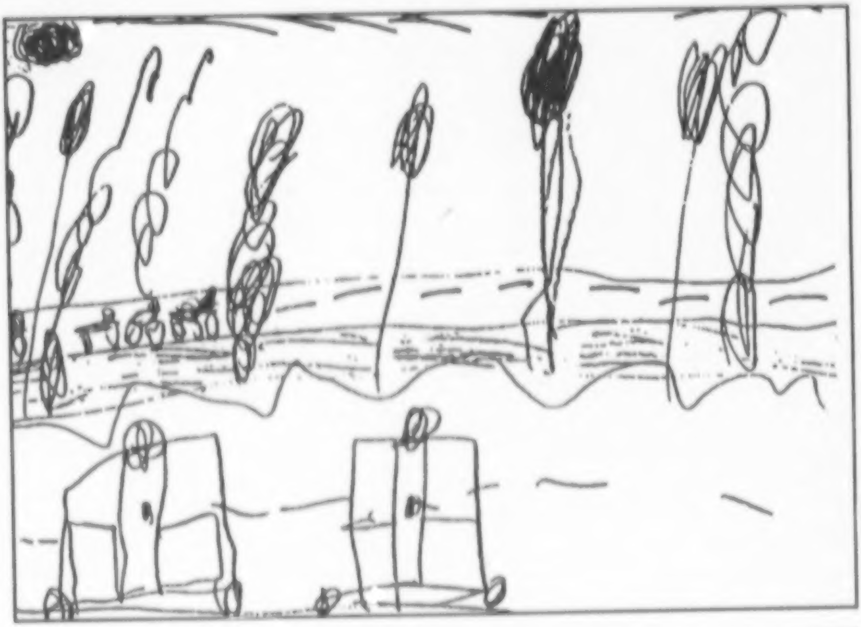
Task 2: Storywriting Production and Reading

Subjects used a wide range of writing systems when asked to write a story: conventional spelling in combination with invented spelling (25%, 8/32), letter strings alone (41%, 13/32), scribbling (2%, 2/32), or drawing (28%, 9/32). In addition to these patterns in writing systems, a wide range of behaviors was observed when subjects' reading attempts of their written stories were considered.

More specifically, only 28% (9/32) of the subjects were classified at the four highest levels (Levels 8–11) of the Sulzby (1985b) classification scheme. Most subjects (72%, 23/32) were classified across the lower levels (Levels 1–7) of the scheme in which their reading attempts did not involve the use of print. Further, among all subjects who did not use print as the source of the message, 52% (12/23) used the wording and intonation of written language (Levels 5–7), and the remaining subjects, 43% (10/23), used oral language (Levels 3 and 4). One subject did not form a story during the reading attempt. Instead, the speech of this subject can be described as Following the Action (Level 1) in the Sulzby (1985b) classification scheme.

These data address the first two research questions and suggest that these developmental schemes can be used to describe emergent reading behaviors of kindergarten children when they are asked to read two different kinds of text. Beyond the issue of measurement sensitivity, the third research question asked: Will children show similar patterns when asked to read either a storybook or their own self-composed text? Results from the present study show that stability in reading behaviors was observed across the two types of text. The Spearman Rank-Order Correlation comparing subjects' emergent reading of a storybook containing conventional orthography and their reading of their own self-composed text (containing a variety of graphic forms) was significant ($r = +0.67$. $\mathrm{p} < 0.05$, $p < 0.05$, two-tailed).

Finally, the fourth research question asked: What is the relationship between children's reading of their self-composed text and their use of not-yet-conventional writing systems? Along these lines, several observations can be made concerning the relation between subjects' reading of their own

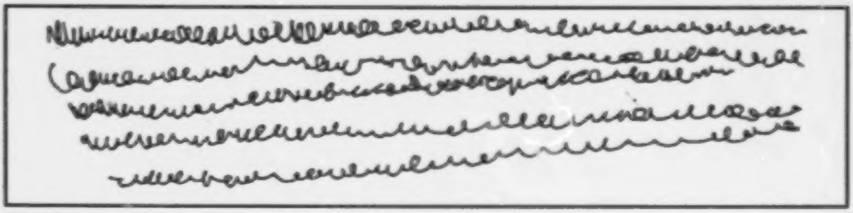


Reading:

Here's me 'n my mom 'n there's Jason's bike, 'n Christian's bike, 'n Jason's mom's bike, 'n here's Christian, 'n Jason's mom, and here's, here's me falling off my bike and this is the grass. And um, have to draw some hills [child picks up pencil and adds more to his production] and then, and then we were, and then I falled off my bike because I, I, I ran, I kinda slid and I went around and then pshhhh [child looks at examiner] fe—fell over the cliff [pause] and then, and then mommy, mommy pulled me up and, and, and I cried because it was real, real hot down there, it was real, uh, like not very nice to go off the cliff like that. It's not so good because I was hurting 'n I was, 'n here it was bleeding, and um, here it was bleeding [child points to places on his wrist and arms]. My finger and kinda on my neck it was bleeding because I fell over and they had a band-aid and then it ripped off [pause], and 'n that's the end of my story. 'N didn't I do it nicely? [Child's eyes were on various parts of the drawing, on the examiner, and on his wrist and arms at one point.]

Figure 1. Dennis' Written Production and Reading of Self-composed Text

text and the graphic form of that text. To illustrate the characteristic patterns in this relationship, Figures 1–4 present photocopy reductions of the writing of several representative subjects (pseudonyms have replaced actual names), along with their reading of those productions.



Reading:

I trained a long time ago, and uh, wait I trained a long time ago, 'n my friends um, were there [pause] so was my brother, so was my Mom and Dad [pause] and um, what was that again? [pause] Oh yeah, and then, and then every time when we got to train it, we got to, used to it. [pause] Ok, what else? [pause] Oh yeah, and, every time my brother fell, his, every time my brother falls, our brothers help him, th— they [pause] they put [pause] first on the backs of our two wheeler and first they push us [pause] and when they push us we [pause] we start to pedal. [pause] Then we start to pedal and we [pause] and we [pause] and I [pause] and I almo— and we start to pedal and we almost got there. At the end. And why we almost got at the end it's because, um, what was it? [pause] Did I do that? [pause] And, um, [pause] I don't know. [pause] And I got all the way to my end of my brother was far away from me. And I was way ahead. And, and when Chrissy didn't know what I was way up ahead he was I [pause] I couldn't see him he was in behind me. And when I didn't see him I was so laughing to death when he came. [Child's eyes were on examiner and looking out the window.]

Figure 2. Beth's Written Production and Reading of Self-composed Text

The first pattern is illustrated by Dennis (Figure 1). Overall, less mature reading behaviors were observed when subjects were reading from drawing, with readings consisting mainly of labeling and commenting on parts of the drawings.

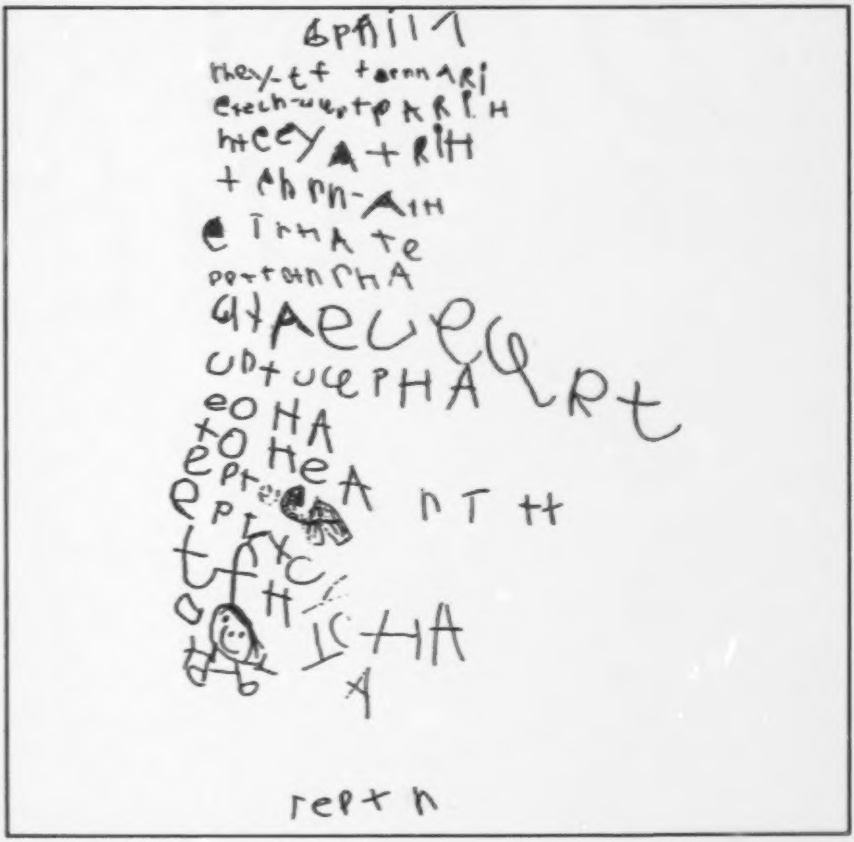
A second pattern can be described for several subjects who read their written production by forming a story using written or oral language-like speech (or a mix) but were reading from scribble. Beth's production and reading in Figure 2 is an example of this pattern.

A third pattern was observed among other subjects who also read their own text using written or oral language-like speech (or a mix) to form a story but who used strings of letters to produce their story. This pattern is illustrated by Erin in Figure 3.

Finally, as illustrated by Jules (Figure 4), subjects who showed the most mature reading behaviors were typically reading from self-composed text that they had written using a mix of conventional and invented spelling.

DISCUSSION

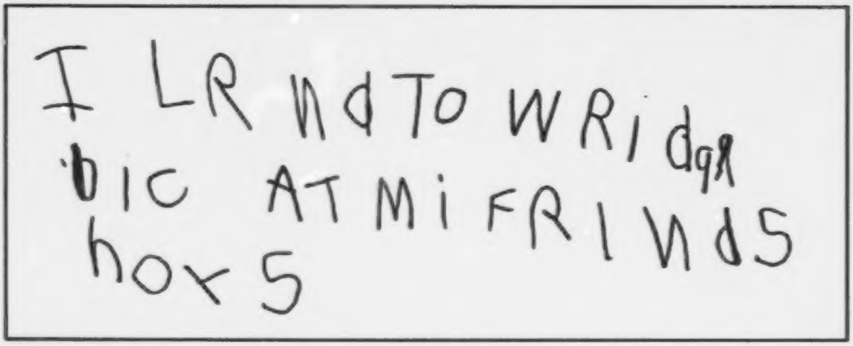
Analyses of the patterns of behavior observed in subjects' storybook reading attempts substantiated the presence of existing categories proposed and used by Sulzby (1985b) in cross-sectional research with two-, three-, four- and five-year-olds to demonstrate developmental literacy trends in independent storybook reenactments. In an effort to extend the application of this



Reading:

My name is __________ and I'm riding with my brother [pause] and, I went outside to ride on my bike [pause] and then I saw my friend her name was Jamie [pause] and she got on my bike with me [pause] then we rided around the block. [pause] We had lots of fun. [pause] And then after we got back home we played and we went back outside to get on the bikes. [pause] We played all the way home. [Child's eyes were on examiner and looking out the window.]

Figure 3. Erin's Written Production and Reading of Self-composed Text



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Reading:

I learned to ride at [pause] a bike at my friend's house. [Child's eyes were on print.]

Figure 4. Jules' Written Production and Reading of Self-composed Text

scheme, results of the present study demonstrated differences in storybook reading behaviors in a cross-section of kindergarten children. Further, when the scale was used to analyze children's reading of their own self-composed text, the scale maintained its sensitivity to differentially describe emergent reading behaviors. Recent research by Barnhart (1991) presents evidence for the predictive and concurrent validity of interpretations of children's performance on several emergent literacy tasks, including the storybook reading reenactment task and the storywriting and reading task. Findings from the present study lend additional validation support to these classification schemes.

The research reported here also examined the developmental link between reading and writing, lending support to the position that there is an overlap in young children's hypotheses about the rules of the written language system of their culture. Considerable attention has been devoted to the reading-writing connection in older children (Tierney & Pearson, 1985); however, investigations of the nature of this link are equally vital across the entire developmental continuum, including early childhood. Through a comprehensive understanding of the various aspects of reading and writing and an acknowledgment of their mutual interdependence, the value of each process in becoming literate can be realized in efforts to help the learner.

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Portfolio Assessment: Interpretations and Implications for Classroom Teachers and Reading Teachers

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Within the past five years, a significant shift in literacy evaluation has occurred. Researchers who examined assessment practices and teachers' decision making issued a call for new evaluation methods (Pearson & Valencia, 1987). Some efforts concentrated on developing better standardized tests (e.g., Wixson, Peters, Weber, Roeber, 1987), and others focused on portfolio assessment (e.g., Tierney, Carter, & Desai, 1991).

Portfolio assessment is a multidimensional system that evaluates literacy development within the learning environment (Au, Scheu, Kawakami, & Herman, 1990). Students' strategies for reading and writing different kinds of texts are demonstrated as they are engaged in the processes in their classroom, not in the artificial context of standardized tests (Winograd, Paris, & Bridge, 1991). Portfolios emphasize what students have accomplished, not what they cannot do (Wolf, 1989). Teachers can view each student's unique growth pattern across time through observations, examination of oral and written products, and conferences (Pils, 1991). Assessment becomes part of the on-going literacy program, not a supplemental task for the teacher to complete. Thus, portfolio assessment provides the teacher with a rich data base from which instructional implications and decisions can be drawn (Reif, 1990).

The effectiveness of portfolio assessment appears to be directly related to teachers' abilities to interpret and utilize the sampled information. Moreover, problems in knowing what, how, and when to record student behaviors can surface. To use observations, for example, teachers must decide what to observe and how to create anecdotal records. To develop anecdotal records, teachers must decide also what to record and how much to write about each student or episode (Paradis, Chatton, Boswell, Smith, & Yovich, 1991). Further, teachers must allocate time for collecting their observations or they will quickly lose track of their students (Baskwill & Whitman, 1990). In addition, the teacher must accurately synthesize and analyze the information to make appropriate instructional decisions. Like expert reading diagnosticians, teachers must be able to recognize patterns of behavior and know how to set a context for assessment, record behaviors, and keep records (Johnston, 1987).

Although studies are not numerous, several factors that affect teachers' use of portfolios have been noted. Portfolio assessment is labor intensive, especially in the initial stages of implementation; therefore, teachers' success depends largely on their enthusiasm and perceptions of portfolios' benefits (Lamme & Hysmith, 1991). Implementing portfolios necessitates a high level of inservice or consultant support to acquaint teachers with alternative assessment tools for data gathering as well as logical ways of interpreting data (Gomez, Graue, & Block, 1991). Likewise, "one assessment tool does not fit all"; teachers need the freedom to experiment and refine assessment procedures over time until a system emerges that enables them to gather the data they deem critical (Hiebert, Hutchinson, & Raines, 1991; Pils, 1991).

Most studies have focused on practicing teachers involved either in mandatory or voluntary incorporation of portfolio assessment. For example, a document recently disseminated to public schools in New York, *New Compact for Learning*, recommends portfolio assessment as one way to improve evaluation and classroom instruction. In preparation for implementation, many school districts are providing teacher inservice and developing their own systems of record keeping. Preservice teachers are excluded from this staff development, yet they, as well as their more experienced counterparts, will be expected to utilize portfolio assessment. The study reported here was part of a larger study involving the interpretation of three primary grade portfolios by undergraduate and graduate students from two colleges. Two questions provided a focus for the study: How effectively do teachers with varying amounts of coursework in reading interpret portfolio data? How effective is portfolio assessment in portraying a child's literacy development?

METHOD

The sample for this study included 24 female students from three teacher education populations, selected because of their varied experiences with teaching and portfolios as well as their formal preparation in reading. Students' coursework reflected a whole language philosophy.

Eight subjects were graduate students (Ex-Grad) enrolled in the final course for their master's degrees in reading education; all were experienced classroom teachers. The Ex-Grad group had collected portfolio data throughout their clinical experience and used the data in designing appropriate instruction. The second group (Ex-Ugrad) consisted of eight undergraduates who had completed a six-credit course in reading/language arts that included a six-week practicum in which students collected portfolio data for a target child. Composing the third group (Noex-Ugrad) were eight undergraduates enrolled in a three-credit course in primary reading methods that included three field visits but no first-hand experiences with portfolio assessment. Thus, each group brought a different perspective to the task.

Subjects were given a portfolio for a second grader, Bryan, compiled over a two-month period by one of the researchers. The portfolio's contents were collected after a review of the literature revealed the components most consistently recommended for inclusion: writing samples, reading samples for texts of varying difficulty, observations, and child's self-evaluations. Structured reading tasks included a cloze passage from the child's social studies textbook and running records for familiar and unfamiliar texts. There was also a listening assessment with story retelling analyzed for story grammar elements. Writing samples for both dictated and self-generated stories were included, as well as the child's immediate and delayed rereading of each one. A spelling features list composed of 14 words tapped the child's strategies and stages of spelling development. Affective data included both reading interviews and reading attitude surveys. The final component was the teacher's anecdotal records for the two-month period she worked with the child.

Subjects were directed to review the contents of the portfolio and summarize the data as though they would be sharing the results with the child's parent during a conference. A set of questions to be addressed in the summary was provided (Table 1), and subjects were directed to indicate data source(s) to support their statements. Subjects were given 10 days to complete this assignment and to develop their summaries. One limitation of the study, of course, was that subjects were unfamiliar with both the context and the child whose portfolio they reviewed.

To develop a scoring protocol, each researcher examined the portfolio separately and compiled a list of all the literacy strategies Bryan exhibited across sources. When Bryan's reading and delayed rereading of his dictated story, his running records, and written responses to a cloze passage were examined, for example, it was evident that he consistently used language cues, both syntactic and semantic, successfully. Researchers' lists were compared and discussed, resulting in a composite list that became the scoring framework. Fifteen reading and 12 writing strategies were identified across the data sources.

Each summary was read independently by the three researchers, who awarded a point for identification of each reading and writing strategy. Comparisons among the scores awarded by each of the three researchers yielded an inter-rater reliability of 91%. Each researcher's raw scores were

TABLE 1
Portfolio Summary Guidesheet Questions

1. What does this child have firmly established as a reader?
2. What is the child beginning to develop?
3. What do you think the child will do next?
4. Do you see any commonality in the kinds of texts the child reads well and those which cause difficulty? If so, what do you see?
5. What reading strategies are demonstrated by this child?
6. What does this child have firmly established as a writer?
7. What is the child beginning to develop?
8. What do you think the child will do next?
9. What writing strategies are demonstrated by this child?
10. Where would you place this child on a literacy continuum (emergent, beginning, or fluent)? Why?
11. How would you help this child further his development in reading and writing? What instructional recommendations would be appropriate?

averaged to assign a final score to each subject. The reading scores could range from 0 to 15 and writing from 0 to 12 points.

RESULTS

How effectively do teachers with varying amounts of reading coursework interpret portfolio data? According to the analyses of variance computed for their reading ($F = 1.24$, $p < 0.31$) and writing ($F = 2.12$, $p < .14$) scores, there were no significant differences among the three groups. This would indicate that all three were equally capable of analyzing portfolio information. The means and ranges for reading (Ex-Grad: 9.5, 4–12; Ex-Ugrad: 8.8, 5–13; Noex-Ugrad: 8.3, 5–12) revealed that each group was able to identify more than half of the reading behaviors Bryan demonstrated. Likewise, the means and ranges for identifying writing behaviors (Ex-Grad: 6.8, 3–12; Ex-Ugrad: 4.8, 3–8; Noex-Ugrad: 4.6, 3–8) showed that the groups cited about half of the child's writing strategies.

How effective is a portfolio in portraying a child's literacy development? A portfolio is much like a puzzle with numerous pieces that, once arranged, should yield the same result each time. Although none of the subjects was acquainted with Bryan, they were able to form an accurate picture of his abilities. By reviewing the documents in his portfolio, they highlighted his reading and writing strategies across tasks, placed him correctly on a developmental continuum, and made appropriate suggestions for future literacy experiences. Thus, this portfolio represented Bryan fairly, even to those who did not know him personally.

DISCUSSION

The findings suggest that experience in portfolio assessment alone does not determine how effectively preservice or experienced teachers will utilize and interpret portfolio data. Two of the groups, Ex-Grad and Ex-Ugrad, had experience with portfolios, yet their scores were not different from the group without direct experience (Noex-Ugrad). These results may indicate that the task of interpreting portfolio data from an unfamiliar context may be different from interpreting data one gathers firsthand.

Teachers who compile portfolios for their own use select documents that best represent children's literacy experiences in the classroom. In summarizing the data for a parent conference, the teacher's familiarity with both the child and the literacy environment enables him or her to explain and connect the child's responses. Conversely, when presented with a portfolio compiled by someone else, the teacher must examine the contents without knowing whether they reflect typical tasks or important events. Thus, the task becomes more difficult because the teacher has neither the child nor the context for verification. In fact, this is one of the issues currently being debated in schools: Are there two kinds of portfolios, one for the current teacher's use and one to be passed on to next year's teacher? If so, should the contents differ? Should there also be an accompanying summary?

Our results raise an alternative explanation. A firm foundation and understanding of the reading process may be essential to success in interpreting portfolio data. Understanding literacy development and having the theoretical underpinnings to interpret data along the literacy continuum provides an essential framework, without which a portfolio is nothing more than a collection of information stuffed in a folder.

Although none of our subjects approached perfection in their summaries, all of them emphasized what the child could do, not his shortcomings. The directions to prepare summaries to share with parents may have led some subjects to highlight what they thought were the key behaviors or benchmarks, rather than to compile an exhaustive list that would overwhelm a parent. All subjects cited evidence in the portfolios to support the statements they made about the child's strategies. Finally, the summaries were free of educational jargon and used language appropriate for a parent conference.

Overall, we are encouraged by our results, and we appreciate the complexity of portfolio assessment. Since our subjects were familiar with emergent literacy behaviors and with some of the tasks represented in the portfolio, interpreting the data was not a major obstacle. Yet in follow-up interviews, they indicated that they had spent an average of two to three hours reviewing the data before they attempted their summaries. This made us wonder how a classroom teacher armed with only a half-day workshop on portfolios would fare when faced with the same task. Inservice workshops about portfolio assessment must focus on a theoretical base in literacy development and the logistics of collecting portfolio data for a classroom of 25 to 30 children. Simply describing alternative ways of collecting data will not provide teachers with a framework for utilizing the data. From this study, we realize that the implications of mandating portfolio assessment are just beginning to be explored.

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Taking Responsibility for Taking Tests

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High school students often perform as if they believe tests results are determined solely by fate. At the first mention of a test, eyes glaze over and personal disassociation kicks in. Taking tests bears no resemblance to taking responsibility. Concerned about this phenomena, I developed an activity to help students understand their roles in taking tests responsibly. Next I explored, with two different groups of high school students, the impact of this technique on test-taking responsibility by observing changes in students' comments and behaviors from a first to a second test. This classroom inquiry was the result of an exchange in which I became a high school teacher for a semester (Richardson, 1991).

RATIONALE

I decided to try this activity after observing the haphazard manner in which 11th graders approached their first test in my class: entering the classroom "wired," finishing the test very rapidly, and neglecting to check over their responses before turning in the test. I wanted them to see that they could make a difference in their own performance. If they could learn from their own mistakes, they might improve on the next test.

Nist and Diehl (1990) provide guidelines to college students about test-

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taking strategies. Richardson and Morgan (1990) advise content teachers to help students analyze their test-taking strategies. Hoffman (1983) describes using journals in a college study-skills class to encourage students to reflect on test performance. I adapted these suggestions to design a five-question test study report.

THE STUDENTS

I taught both 10th grade "average ability" students, who were generally not college bound and less than motivated to study, and 11th grade "high-ability" students, who were college bound and more motivated to study. I tried this test responsibility activity with both groups of students for two tests and hoped to see positive differences in attitudes, responsibility, and study behaviors. I wanted the 10th graders, who were likable and gregarious but generally disinterested in school, to see that study does pay off, that they could make a difference in their own performance, and that they could anticipate test questions rather than leave it all to fate. I wanted the 11th graders, who were motivated and very centered on getting good grades but relied on the teacher to tell them everything to learn, to realize that they could be in charge of their own study and that they could identify effective study behaviors. For both groups, my goal was to foster metacognitive awareness.

TEST STUDY REPORT

The test study report consisted of five questions. Before my students took a test, they answered first: How long did you study for this test? I collected the test study reports, with only this first question answered, as I handed out the test. I averaged their reported study times. Just before I returned the graded test, I handed back the test study report and asked them to respond to question 2: Was this test what you expected? Why or why not? Then I asked them to record their anticipated grade. Next I handed back and reviewed the tests. I announced the results of the average for question 1. Last, I asked them to consider questions 4 and 5: After reviewing your test answers and your grade, what have you learned? What would you do differently for the next test?

A DESCRIPTION OF THE TESTS GIVEN

I completed this activity with two major tests per group, each covering six weeks of instruction. The tests consisted of multiple choice, true-false, identification, closure, and short essay questions. I encouraged students to justify a multiple choice answer because I would give some credit for a "reasonable justification." False items were to be rewritten as true statements to receive full credit.

The first 10th grade test covered a short story unit. I indicated at the start of the unit that students could use notes for this test to encourage note-taking during instruction. Test questions required thinking and searching through notes rather than locating facts. Students could not use notes for the second test, which covered a class novel, because discussion had been emphasized. More essays were included on the second test; I shared several possible essay questions in advance to help students think and organize before the test.

Both tests for 11th graders were closed notes and book. The first covered Early American literature; the second covered two acts of *The Crucible*. Students matched writers to their writings, players to quotations, ideas and themes to writers and pieces. They completed closure exercises. In addition, they wrote essays in response to questions provided during test review sessions.

STUDENT RESPONSES TO THE TEST STUDY REPORT

I carefully read responses that students wrote each of the two times I used this test study report. I studied the reports for patterns.

Responses to Question 1

Average study times for the 10th graders' tests didn't change much: 26 minutes for the first test and 22 minutes for the second test. Although there was quite a range, from one report of two and a half hours to one of five minutes, these 10th graders certainly weren't studying a lot. I hoped that I would read several comments about the necessity for study strategies in response to questions 4 and 5 by the second test study report.

For 11th graders, reported study times for test 1 ranged from three hours to one-half hour. The average was 57 minutes. By test 2, the reported average was 47 minutes, although the ranges were similar. The 11th graders reported studying more than the 10th graders, as could be expected from their age, maturity levels, and motivation. The decrease in study time from test 1 to test 2 could have related to "comfort level"; if they had learned what kind of test to expect, they might study a bit less but "smarter." I considered the results of responses to the other questions to make some judgments about this speculation.

Responses to Question 2

Next I looked at question 2 to see if, from the first to the second test, students were able to come closer in their expectations about test content. The 10th graders' expectations were more accurate for the first test (63% for test 1; 55% for test 2); I read comments such as, "I really thought you'd let us use our notes"; "I hoped for open-notes." Even though I had clearly stated on several occasions that the second test would not be open-notes, they apparently hoped that I would change my mind. No wonder the 10th graders studied so little; they had not believed my description of the test.

However, the 11th graders did come closer in their expectations by the second test (58% for test 1; 76% for test 2), perhaps because their tests were similar in construction. Because the majority felt confident about the kind of test they would be taking, the reported 10-minute reduction in study time made sense to me.

Responses to Question 3

The 10th graders estimated their grades for the first test very well. Not surprisingly, given their expectations that they would be able to use notes for the second, they overestimated their grades. The 11th graders estimated within two points for the first test and within one point for the second test. This consistency may be related to the tests' similar format and students' accurate expectations. Table 1 shows the average grades expected and received for both groups.

Responses to Question 4

This question asked students to identify what they had learned from reviewing the test results. Comments fell into four categories: specific strategies; general comments about studying more; nonhelpful comments, which were unrelated to improvement, although perhaps expressive of affect; and no comment.

Table 2 provides percentage of response per category for 10th graders.

TABLE 1
Average Grade Expected/Received

	10		11	
	Expected	Received	Expected	Received
Test 1	87	86.5	81	83
Test 2	81	76	86	85

TABLE 2
10th Grade Results for Questions 4 and 5

	Q4				Q5			
	What did you learn?				What would you do differently?			
	SC	"Study"	NHC	NC	SC	"Study"	NHC	NC
Test 1	33%	21%	38%	8%	38%	44%	18%	–0–
N = 39								
Test 2	24%	35%	38%	3%	26%	47%	21%	7%
N = 34								

SC = specific comment
"Study" = study was the comment
NHC = nonhelpful comment
NC = no comment

Examples of specific comments included "taking good notes helps"; "I rushed through some things and made careless mistakes"; "If I listen in class I may do well on the test"; and "If I keep myself organized and study, I make good grades." In the study category, students said such things as, "I need to study a bit more" and "I didn't study enough." Nonhelpful comments included "I am dumb"; "This test is the hardest I've taken this year"; and "The test was harder than I thought."

Tenth graders were successful at identifying some specific study strategies about learning to take tests. Many (54% on test 1 and 59% on test 2) did identify responsible behaviors. Nonhelpful comments indicated negative feelings but not responsible behaviors to rectify them. The number of comments classified as nonhelpful indicated that students needed consistent teacher support to begin studying responsibly. By the second test, more students chose to make comments rather than leave the space blank, perhaps indicating a pattern toward more responsible behavior.

Table 3 provides responses to question 4 for 11th graders. Illustrative comments in the specific comments category included, "I got confused with Bradford and Edwards"; "Squanto was a Northern Indian"; "I may need to read a question more than once"; "Recheck paper; think out questions thoughtfully"; "Pay more attention to little clues"; and "Telling us what to expect helped a great deal." Examples of study comments are "I need to study longer" and "Studying really paid off." Eleventh graders also made nonhelpful comments, such as "I didn't get an A"; "So far I have a decent shot at a good grade"; and "No matter how much I study I will never receive an A."

The majority of 11th graders' comments were specific, and the number had increased by test 2. "Study" type comments remained a steady percentage of the total. The 11th graders were serious about wanting to improve and finding ways to do so. Even the nonhelpful comments, although still affective in tone, reflected an achievement orientation. These nonhelpful

TABLE 3
11th Grade Results for Questions 4 and 5

	Q4				Q5			
	What did you learn?				What would you do differently?			
	SC	"Study"	NHC	NC	SC	"Study"	NHC	NC
Test 1 N=36	42%	31%	28%	-0-	60%	26%	11%	3%
Test 2 N=30	47%	30%	17%	7%	55%	35%	-0-	10%

SC = specific comment
"Study" = study was the comment
NHC = nonhelpful comment
NC = no comment

comments had decreased by test 2. Students seemed able to take responsibility for their own work and to be reflective about improvements.

Responses to Question 5

This question was designed to help students articulate different strategies for future tests. Categories from question 4 also fit these responses. Tables 2 and 3 report results for 10th and 11th graders, respectively.

Tenth graders made the majority of their comments about changes they could make, including study. They made specific comments, such as "Make sure there aren't questions on the back"; "Reread the stories the night before the test"; "Take better notes"; "Go over my notes more, look at the stories again"; "Arrange my notes in order"; "Take my time and reread everything!" Representative study comments included "Study longer and harder" and "Study more." However, they made fewer such comments on test 2. They tended to make several nonhelpful comments, and these blamed outside factors, such as the teacher, the book, or fate. For example, one student hoped "there are easier stories." Although many did realize that they could control how well they performed on a test, a hard-core minority did not.

Even on the first test study report, 11th graders were able to recognize many concrete ways to improve their test-taking strategies (86%). Examples of their specific comments included "Go over test before turning it in"; "Study more from book, write in notebook" and "Prepare myself better—too much going on last few days." They also recognized that they needed to "study longer" and "study more." Nonhelpful comments were found only on the first report; by the second, students were either not commenting or had designated strategies for improvement. Only one nonhelpful comment seemed to blame outside factors: "It is way too much to learn."

CONCLUSIONS

Teachers should interpret test study reports with care; patterns in responses across questions and over time can provide as much or more information as summarizing responses. Test study reports have several advantages. By noting the amount of study time, teachers can help students see ways that study pays off and help them realize that studying "smart" is more important than how much time one spends studying. Second, if students are to study expectantly, they must realize what sort of test the teacher will give. Teachers, of course, must be consistent and clear about their testing format throughout a unit. In addition, students can recognize how well they have done on a test and take responsibility for achieving a realistic goal. It is possible that 10th graders' difficulty with this was a function of the two different types of tests. Perhaps teachers should use at least two tests of the same format before changing.

Younger, less motivated students seem more willing to place blame outside of themselves when they perform poorly. Yet they can acknowledge their own responsibility. The test study report seems to aid even the hard-to-reach student in thinking about his or her own role in the testing process. Most students identified specific strategies or a general suggestion to study. By having individuals review their own test study reports right before the next test, they might create "study contracts" with themselves. The teacher might also summarize students' suggestions and make them part of the review session that precedes a test.

For the 11th grade students, who were motivated, mature, and had college as a goal, challenging themselves more and tempting fate less was an easier task than for the 10th graders. They studied more, predicted test format and their grades fairly well, identified learning, and suggested improvements to themselves.

The technique also worked with the 10th graders by establishing expectations for test-taking behavior. Whenever students who had received poor grades would ask me for individual help, I had them look first at their test study report. Often we discovered that a poor test grade was more indicative of faulty study habits than of faulty learning. When parents requested suggestions to help their children do better, I referred them to what their children had written on the report. The value of test study reports for me remains the insight I gained about my students' test study habits, their expectations and frustrations with themselves, and the ways in which I could keep in touch with them and help them help themselves.

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Scotopic Sensitivity Syndrome and Its Treatment by Colored Overlays and Lens Filters: An Update

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In recent years, educators have become increasingly aware of Scotopic Sensitivity Syndrome (SSS), a supposed visual perceptual disorder that has been treated with colored plastic overlays and tinted eyeglass lenses. According to Helen Irlen (1983), the individual credited with discovering the affliction, SSS involves a broad range of reading-related symptoms including abnormal sensitivity to light, blinking and squinting, red and watery eyes, frequent headaches, word blurriness, print instability, slow reading, skipping and rereading lines, and difficulty reading at length due to general eye strain and fatigue. Literally thousands of Irlen clients report that these physical symptoms can be eliminated when appropriate colored overlays and lenses are prescribed. In turn, the overlays and lenses are said to facilitate improved reading performance.

Few topics in the field have generated the intense interest and controversy that surround Scotopic Sensitivity and its treatment. The attention ranges from extreme enthusiasm and advocacy to unwavering skepticism and resistance. The controversy is perfectly understandable. SSS has been linked by Irlen and her associates with dyslexia, making the treatment a sure target. The idea that a complex perceptual or neurological disorder such as dyslexia can be offset by such simple treatments as colored overlays or tinted lenses would seem to border on the absurd. At the same time, testimonials to the Irlen method smack of the miraculous. Critics would contend that it "sounds too good to be true." To complicate matters, Irlen's diagnostic procedures are closely guarded trade secrets and her lens filter prescriptions are patented, a combination of circumstances that inhibits properly controlled, objective research from being conducted. And finally, although Irlen clients or parents are expected to shoulder a considerable expense, they must do so in the absence of a satisfactory physiological explanation as to why the overlays and filters would work at all.

The purpose of this paper is to provide a twofold update on this controversial topic. First, a very brief accounting of the existing research on SSS is presented, followed by a general, critical analysis of both supportive and refutational studies. Second, the results of some exciting new studies that seem to provide a functional and physiological explanation both for the existence of Scotopic Sensitivity and its reported successful treatment by colored overlays and lens filters are reported. For a fairly complete description of the symptoms of Scotopic Sensitivity (e.g., photophobia, background accommodation, visual resolution, span of focus, and sustained focus), as well as important considerations regarding Irlen's diagnostic procedures and treatments, see Irlen (1991), Rickelman & Henk (1990), Lea & Hailey (1990), and Podell (1990).

RESEARCH ON SCOTOPIC SENSITIVITY

The research on the existence of Scotopic Sensitivity and its treatment with colored overlays and tinted lens filters includes both validation and refutation. On one hand, research conducted in Australia (Chan & Robinson, 1989; Cheetman & Ovenden, 1987; Hannell et al., 1989; O'Connor, Sofo, Kendall, & Olsen, 1990; Robinson & Miles, 1987; Robinson & Conway, 1990; Whiting, 1988) and on the west coast of the United States (Adler & Atwood, 1987; Haag, 1984; Irlen, 1983; Miller, 1984) has been promising. As a body, these studies seem to indicate that the colored overlays and lens filters exert a facilitative effect on aspects of visual perception related to reading including increased rate and accuracy of recognition and enhanced comprehension.

On the other hand, there is a large body of contradictory research, conducted mostly by optometrists, that questions Irlen's diagnostic methods and color-driven treatments (Blaskey et al., 1990; Saint-John & White, 1988; Scheiman et al., 1990; Scheiman, Blaskey, Gallaway, Ciner, & Parisi, 1990; Stanley, 1987; Winter, 1987). These studies failed to detect significant performance advantages in either basic visual perception or reading achievement associated with the use of the overlays or lens filters. Generally, it is suggested that Irlen candidates are, in fact, actually the victims of undiagnosed conventional visual problems. A small group of optometrists has also contributed critical essays to the professional literature that scrutinize any study that tends to validate the Irlen approach (Rosner & Rosner, 1987, 1988; Solan, 1990; Solan & Richman, 1990).

What seems to be occurring is a turf war. Optometrists' criticisms of studies that support the Irlen approach are severe. They seem determined to dispel any hint of its possible merit. Developmental optometrists (Blaskey et al., 1990; Scheiman et al., 1990), in particular, seem to be advancing an alternative agenda that recommends visual training in lieu of colored overlays and lens filters. This is not to say that the criticisms of pro-SSS studies are invalid. Many concerns are indeed legitimate. But beyond these legitimate concerns, it may be that many of these vision specialists view the Irlen method as professional encroachment. In fact, the Irlen organization was taken to task in Florida for practicing optometry without a license.

The other combatant in this melee, the Irlen organization, is not without its faults. It must be remembered that the Irlen approach to diagnosing and treating SSS is a business venture. Were the method found to be ineffective or without basis, the business could very well cease to exist. To the scientific community, the Irlen associates have not been as forthcoming as they could be in clearing the way for controlled research or for reducing costs in the interest of helping disabled readers. Unfortunately, the losers in this battle are clearly the clientele, in many cases children in need of assistance. Neither the optometrists nor the Irlen associates seem to have placed the well-being of the candidates at the heart of the matter.

CRITIQUE OF EXISTING RESEARCH

Interestingly, the full complement of research on the Irlen method shares an important characteristic: without exception, all of the studies are fundamentally flawed in some important way. That is to say, no single study, whether it supports or refutes the Irlen method, is sufficiently well controlled to be definitive. Some of the many shortcomings of the extant research are described below. Several studies violate only a few of these considerations; many others are a great deal more culpable.

Potentially Biased Studies

As suggested, optometrists have a vested interest in refuting the existence of SSS and the successful treatment of the disorder with color-driven visual aids. Likewise, much of the supportive research has been generated by individuals affiliated with the Irlen clinics in some way. If the Irlen approach is judged to be effective, the market for diagnostic services and the corresponding overlays and lens filters could be enormous.

Sampling Problems

In many studies, selection of subjects has been problematic for a variety of reasons. First, not all studies have systematically used individuals whose profiles suggest the presence of SSS in moderate or high degrees. In some cases, merely being a disabled reader qualified an individual for inclusion. Also, because the Irlen diagnostic protocols are not public or because trained Irlen screeners did not perform the assessments, it was impossible in some cases for the researchers to ensure proper sampling. Moreover, the sample sizes, particularly those of the refutational studies, have been small. Curiously, some researchers neglected to perform thorough eye examinations prior to the study even though this is an absolute requirement before Irlen screening will ensue.

Lack of Proper Control Groups

Because several studies, especially the supportive ones, failed to include appropriate control groups, the possibility of novelty or placebo effects exists. This oversight, surprisingly common in SSS studies, has been pointed out by several writers (Hoyt, 1990; Lea & Hailey, 1990; Solan & Richman, 1990).

Inappropriate Dependent Measures

The choice of reading materials and reading tests in some studies has been poor. Few, if any, of the reading tests used would satisfy most contemporary reading educators, since many critical variables such as reader prior knowledge, passage length, reading mode, and questioning types have gone unconsidered. Moreover, the measures may not be sensitive enough to detect treatment effects. Yet another critical aspect related to dependent measures is that, in general, researchers have failed to differentiate between immediate perceptual improvement and longer term instructional facilitation. And, finally, the effects of the overlays and lens filters on sustained reading and reading fatigue have not been systematically studied, even though this is the aspect of reading for which treatment may be most universally useful.

Study Duration

For the most part, SSS investigations have not been of sufficient duration to allow for assessing the long-term effects of either the overlays or the lens filters (Hoyt, 1990; Lea & Hailey, 1990). Longitudinal studies will be necessary.

Overlay and Filter Considerations

Irlen materials include eight overlays and more than 150 lens filters; the overlays filter the light twice, before it hits the paper and then afterward as it heads toward the eye. Despite these differences, the effects of overlays and lens filters have been linked together consistently. A distinction needs to be made between them for the purposes of interpretation. In addition, some studies have not used the standard Irlen overlays or filters, thereby rendering criticisms or support equally ungeneralizable.

Exclusive Emphasis on Statistical Significance

Much of the research focuses strictly on statistically significant effects. Although this approach is central to good science, another kind of significance needs to be considered: *personal* significance. That is, the thousands of individuals who believe they have been helped by the Irlen approach are unlikely to abandon their overlays or lens filters, even when confronted with a host of studies that fail to show statistical significance. An individual's self-perception of treatment effectiveness, whether real or imagined, is important from a motivational standpoint. To dismiss the volume of positive anecdotal evidence in favor of an exclusive reliance on experimental studies seems to be not only overly conservative but also perhaps myopic.

Clearly, Scotopic Sensitivity Syndrome is not yet widely accepted by the scientific community. Accumulating the kind of research base that leads to the acceptance of such an approach takes a great deal of rigorous methodological control, a systematic plan of inquiry, consistency across studies, objectivity, and interdisciplinary cooperation, all commodities that seem to have been in short supply with regard to SSS.

FUNCTIONAL AND PHYSIOLOGICAL EVIDENCE

Neither the causes of Scotopic Sensitivity Syndrome nor the reasons why the colored overlays and filters might remedy the problem are well understood. Irlen (1983, 1991) has suggested that scotopic individuals exhibit an uncommon sensitivity to specific frequencies and wavelengths of the white light spectrum. Reading black print on a white background may overstimulate certain cells in the retina and send inappropriate signals to the brain. The light frequencies reflected from the page seem to cause rapid eye fatigue, resulting in reading difficulties such as poor letter and word identification and an inability to read easily and efficiently for any length of time. The colored overlays and filters are thought to selectively reduce the input of specific troublesome wavelengths of light. In effect, frequencies that may cause perceptual distortion are eliminated before they reach the retina and the brain. As a result, visual information may be more effectively analyzed. Although the theory is interesting, in the absence of hard evidence, it remains speculative.

Two recent studies shed new light on the functional and physiological mechanisms underlying SSS, and, hence, offer insights into why colored overlays and lens filters may produce the positive results reported by some researchers and numerous clients. One study comes from the optometric literature (Solman, Dain, & Keech, 1991), and the second comes from the field of neurobiology (Livingstone, Rosen, Drislane, & Galaburda, 1991). Taken together, these studies suggest the emergence of a compelling, possibly unified theory.

Solman et al. (1991) build upon the idea that visual encoding involves two interacting subsystems: sustained and transient. The sustained system transmits information slowly but does so for the duration of an eye fixation. The transient process, on the other hand, transmits information quickly but does so only at the beginnings and ends of fixations. The sustained system provides information about the structural detail of the visual stimuli whereas the transient system provides global information about its temporal resolution and spatial location.

The two processes mutually inhibit one another; that is, the onset of one terminates the other. For instance, transient activity halts continuing sustained activity and, in effect, separates the information encoded during a sequence of different eye fixations. If these data were not separated during reading, the overlap of words and letters would create confusion during recognition and interpretation processes. It is not difficult to imagine how the failure of the two subsystems to work cooperatively could result in the symptoms of blurriness, print instability, and eye fatigue typically associated with SSS.

Solman et al. (1991) also speculate about how the colored overlays and lens filters might eliminate these symptoms. Their reasoning is based on previous studies that have found transient processing in disabled readers to be faulty or weak. The researchers suggest that the removal of some of the medium to high spatial frequency information, a bona fide capability of the overlays and lens filters, might mitigate the effects of a transient deficit since there is no apparent way either to strengthen or speed it up. In other words, the overlays and lens filters provide a balance by limiting activity in the sustained system.

To test their hypothesis, the researchers conducted an experiment that compared the contrast sensitivity judgments of 20 disabled readers and 20 good readers. Judgments were made under four conditions: best tint, worst tint, neutral tint, and no tint. It was found that, for each of the disabled readers, the best colored filter dramatically reduced sensitivity when the spatial frequency moved into the range of printed material. By contrast, the performance of good readers changed very little when the ideal tint filters were used. Consistent with their theory, the researchers concluded that colored optical filters might improve transient-on-sustained inhibition in disabled readers by diminishing the activity level of the sustained system.

The second study of interest (Livingstone et al., 1991) provides physiological and anatomical evidence that might coincide with the Solman et al. (1991) theory and findings. The Livingstone study centers on the idea that fast, low-contrast (global) visual information is transmitted in primates by a *magnocellular* system and that slow, high-contrast (detail) information is transmitted by a *parvocellular* system. This separation of visual pathways begins in the retina but is most pronounced in the lateral geniculate nucleus of the brain. The two systems are thought to differ in terms of color selectivity, contrast sensitivity, temporal resolution, and acuity. In this sense, the segregation of the parvocellular and magnocellular systems bears a striking resemblance to the Solman et al. (1991) metaphor of transient and sustained subsystems.

Livingstone and her colleagues began with a premise that had been indicated in a number of previous studies. These perceptual studies suggested that dyslexia can be reliably associated with an abnorm[illegible] in the aspect of the visual system that is fast and transient and has high contrast sensitivity and low spatial selectivity. These characteristics define the magnocellular system as well as the transient system described by Solman and his associates.

Livingstone et al. (1991) compared the visual evoked potentials of a small number of dyslexic and control subjects to different types of stimuli. They found that dyslexics showed reduced visually evoked potentials to rapid, low-contrast stimuli (the magnocellular system) but normal responses to slow or high-contrast stimuli (the parvocellular system). Again, the deficit in the magnocellular system coupled with the integrity of the parvocellular system would appear to be roughly analogous to the sustained/transient imbalance theory.

Finally, the researchers compared the lateral geniculate nuclei from five dyslexic brains with those of five control brains. Once more they found irregularities in the magnocellular but not the parvocellular system. In effect, the magnocellular layers were more disorganized in the dyslexic brains, and the cell bodies of the neurons appeared to be smaller. This latter finding is important, since smaller cell bodies tend to have thinner axons that would be slower in transmitting information. In addition, the magnocellular areas were significantly smaller in the dyslexic brains, but there were no significant differences between controls and dyslexics in the parvocellular layers.

The implications of these findings for facile reading to occur are clear: information from the magnocellular system must precede the slower parvocellular system. If the magnocellular system is sluggish (as is suspected in dyslexics), words might appear to blur, fuse, or jump off the page, causing misperception and discomfort—the precise signature of individuals afflicted with Scotopic Sensitivity Syndrome. Once again, the possibility arises that the use of colored light filters may make it possible to synchronize the two systems by inhibiting the parvocellular or sustained visual systems.

A FINAL WORD

Given the emerging functional, physiological, and anatomical evidence, educators should keep an open mind about the existence and treatment of Scotopic Sensitivity Syndrome. Surely a vast amount of work remains to be done. But as has been suggested elsewhere (Henk, 1991), we are left with an important question: Should the treatment, however potentially useful, be withheld until tightly controlled research studies verify its unequivocal usefulness and safety? Although this position is professionally prudent, it raises a critical related question: Is it defensible to deny treatment to prospective candidates in the meantime? How we contend with these questions may affect the academic future of countless disabled readers.

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Questioning the Verbal Superiority of Girls: Gender Differences Revisited

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Gender differences are a popular topic for educational research and have become more so in the past two decades. The *Current Index of Journals in Education* (*CIJE*) was searched for two time spans, 1971–1973 and 1985–1987. The two periods were very similar in the total number of studies indexed in the *CIJE* but not in the number indexed under sex differences. In the earlier period, about 800 citations appeared under sex differences as a major descriptor as compared to about 1,650 for the later period. Thus, in less than 15 years, the volume of published research on sex differences more than doubled. In each period, the number of studies of sex differences greatly exceeded the number of studies of age differences or ethnic differences, two other demographic variables historically of interest to educational researchers.

Verbal ability and reading achievement have been a popular arena for gender-related research, and the superiority of girls has been a widely accepted finding. Maccoby (1966) and Maccoby and Jacklin (1974) concluded that sex differences favoring girls in verbal ability and boys in mathematics ability were well established. Dwyer (1973) cited a similar finding; more recently, Holbrook (1988) characterized the superior reading achievement of girls as a foregone conclusion.

A review of the more recent research literature indicates that the historical view regarding gender differences needs to be changed. We will not here attempt an exhaustive review of this recent research. Such reviews can be found elsewhere, including in some of the references we cite. Rather, our aims are (a) to describe some notable recent studies that challenge the historical "truth" on the verbal superiority of girls, (b) to describe recent studies that show that gender differences depend on the type of cognitive test used to assess abilities, and (c) to examine research and instructional implications of these two groups of studies.

RECENT STUDIES OF VERBAL SUPERIORITY

Two studies that involved large data bases are of particular interest here: Hogrebe, Nist, and Newman (1985) and Hyde and Linn (1988). We also will cite briefly the findings from the National Assessment of Educational Progress (NAEP) and two recent small studies.

Hogrebe et al.'s (1985) research was based on data from the High School and Beyond Study, which was conducted by the National Opinion Research Center at the University of Chicago for the National Center for Educational Statistics. More than 500,000 students from more than 1,000 high schools participated in this study. Hogrebe et al. analyzed reading achievement test scores (vocabulary and comprehension tests) from about 23,000 high school seniors and a slightly larger group of high school sophomores. The analysis revealed a gender difference favoring boys. Although statistically significant, the difference was extremely small, with gender accounting for less than 1 percent of variance in reading scores. Hogrebe et al. cited findings from the National Assessment of Educational Progress (NAEP, 1985), also based on a very large sample. NAEP data showed a significant gender difference in favor of girls, which was also so small as to be of dubious meaning.

Hyde and Linn (1988) did a meta-analysis of 165 studies of gender differences in reading achievement and verbal abilities. The studies collectively embodied results from almost 1.5 million people. The size of the gender effect in this analysis was expressed as a *d* value, which is the female mean score on a verbal/reading cognitive measure minus the male mean on that measure divided by a standard deviation based on pooled deviation scores (individual score minus the gender mean). A *d* value of 0.20 reflects a small effect size. In the Hyde and Linn study, the largest gender effect was 0.33 for "verbal production." The *d* values for vocabulary and reading comprehension were about zero. From this, the authors concluded that current ways of measuring abilities in the verbal domain show no gender differences in our society.

The findings of recent studies of gender differences are consistent with the foregoing studies. In an unpublished longitudinal study, Yarborough and Johnson (1987) tracked the reading development of elementary school children over a seven-year period. Researchers used a number of different tests but found no consistent evidence of gender differences. A study by Drane, Halpin, Halpin, and Worden (1989) examined four facets of reading achievement in relation to gender and cognitive style among second grade children. The cognitive style dimension, measured by an embedded figures test, was field dependence versus field independence. The former was described as the tendency to adhere to the structure of a stimulus situation and the latter as the tendency to restructure the situation. The facets of reading achievement studied were comprehension, sight vocabulary, vocabulary in context, and word-part clues. In all of these facets of reading achievement, field-independent children were superior to their field-dependent peers, but neither cognitive style nor any of the measures of reading achievement was associated with gender.

GENDER DIFFERENCES AND TYPES OF COGNITIVE TESTS

The problem of confounding factors is the bane of the researcher's work and is especially troublesome for the educational researcher. In this regard, the influence of test type on test scores has long been recognized. Less known and less often studied are significant and educationally important gender differences in performance on different types of tests (e.g., free-response, multiple-choice). Some research evidence suggests that males perform better than females on multiple-choice tests as compared to essay tests. For example, in a British study, Murphy (1980) examined trends in scores on a geography examination on which male and female scores traditionally had been quite similar. Following the introduction of multiple-choice questions into the examination, males' scores increased relative to females' scores.

In a study of 15-year-olds in Ireland, Bolger and Kellaghan (1990) examined gender differences in language and mathematics in relation to test type. Students were tested in mathematics and in two languages, Irish and English, using multiple-choice and free-response tests designed to cover the same content. On both types of test, the mathematics scores of males were substantially superior, and the verbal scores of females were slightly superior. Moreover, females seemed to have greater advantage on the free-response tests and males on the multiple-choice tests.

A recent study in Israel by Ben-Shakhar and Sinai (1991) found a gender-related difference in multiple-choice test performance that seemed related to risk taking. Males appeared to be more willing to guess. Females omitted more items, even on tests on which they scored high. This greater tendency to guess seemed to enhance males' scores, both in this study and in the studies in Ireland and Britain.

IMPLICATIONS FOR INSTRUCTION AND RESEARCH

Macoby (1990) notes that, historically, research on gender differences is linked to the psychology of individual differences. A common research focus in this area is to identify sources of variance in scores on one or more behavioral dimensions, such as reading achievement or verbal abilities. Researchers commonly classify or measure individuals on some antecedent variable that might "explain" variance on a dependent variable. From this perspective, gender is an appealingly simple factor. But despite the convenience factor, the recent studies cited here raise serious questions about the usefulness of gender as an antecedent variable in studies of reading achievement and verbal ability.

Another important research consideration relates to test type or format. The studies discussed earlier in this paper and virtually all other research on gender differences in reading achievement and verbal abilities are based on multiple-choice tests. Would the findings have been different had other methods of assessment been used? The researchers whose work has been cited here acknowledge this methodological issue. Hyde and Linn (1988) qualify their conclusion by noting that it is based on current ways of measuring verbal ability. Hogrebe et al. (1985) note that tests did not measure a full range of reading skills. The future researcher who seeks to further explore gender differences as a source of variation in reading achievement and verbal abilities should draw from a broader arsenal of assessment methodologies, including not only free-response tests but also practical exercises such as those used in adult literacy assessments.

Recent research on gender differences also has an important instructional implication. In negating gender as a source of variation of reading achievement and verbal abilities, the studies cited here serve to reemphasize the broad range of differences within each gender group. Rather than "Gender Differences Revisited," perhaps the subtitle of this paper should have been "Individual Differences Rediscovered." For teachers of reading, that is the major point.

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